

**Aviation**

# **Unmanned Aerial Vehicle Flight Regulations**

**Headquarters  
Department of the Army  
Washington, DC  
14 May 2004**

**UNCLASSIFIED**

# ***SUMMARY of CHANGE***

AR 95-23

Unmanned Aerial Vehicle Flight Regulations

This publication, dated 14 May 2004--

- o Provides guidance, practices, procedures, and rules for U.S. Army unmanned aerial vehicle (UAV) systems, referred to by the Federal Aviation Administration as remotely operated aircraft.
- o Delineates the responsibilities for the Commander, U.S. Army Intelligence Center and Fort Huachuca (ATZS-CG), AZ 85613-6000, with regard to training and doctrine issues and practices for Army UAVs, in coordination with the Commander, United States Army Aviation Center (USAAVNC), Fort Rucker, AL, and Director, United States Army Safety Center (USASC), Fort Rucker, AL. (para 1-4f).
- o Identifies military and civilian personnel authorized to operate Army UAVs (para 2-1).
- o Provides a crew endurance guide for UAV unit commanders (para 3-9, table 3-1).
- o Prescribes currency requirements for air vehicle operators and mission payload operators (para 4-14).
- o Describes functional responsibilities of the UAV operators (air vehicle operator, mission commander, mission payload operator, and, if applicable, external pilot) (chap 4, sec II).
- o Lists mandatory prerequisites for UAV instructor pilot, maintenance test pilot evaluator, maintenance test pilot, and standardization instructor pilot candidates (chap 4, sec II).
- o Prescribes UAV adherence to the safety of flight and aviation safety action message procedures and formats (chap 6).
- o Prescribes weight and balance guidance for UAV operations (chap 7).

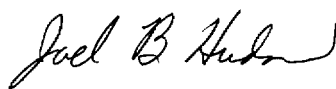
Aviation

Unmanned Aerial Vehicle Flight Regulations

By order of the Secretary of the Army:

PETER J. SCHOOMAKER  
*General, United States Army*  
*Chief of Staff*

Official:



JOEL B. HUDSON  
*Administrative Assistant to the*  
*Secretary of the Army*

**History.** This publication is a new Department of the Army regulation.

**Summary.** This regulation covers unmanned aerial vehicle (UAV) operations, air vehicle operator/crewmember (AVO) training and currency requirements, and flight rules. It also covers Army UAV general provisions, training, standardization, and management of UAV resources.

**Applicability.** This regulation applies to all Active Army, the United States Army Reserve, and Army National Guard/Army National Guard of the United States (including periods when operating in an Army National Guard capacity) systems and personnel, including Department of Defense/Department of the Army civilians and civilian contractors, involved in the operation, training, standardization, and maintenance of such unmanned aerial vehicle systems. The provisions contained

herein are intended to govern personnel qualification and currency training for those UAV systems that specifically require military occupational specialty 96U AVO personnel (currently UAV systems supporting maneuver brigade level and above). UAV systems designed for non-military occupational specialty 96U operator/personnel (that is, small UAVs and micro UAVs) are not intended to be governed by provisions in this regulation. All UAV operator personnel will, however, require some familiarization training in airspace structure and airspace management/coordination. During mobilization, chapters and policies contained in this regulation may be modified by the proponent.

**Proponent and exception authority.** The proponent of this regulation is the Deputy Chief of Staff, G–3 (DCS, G–3). The DCS, G–3 has the authority to approve exceptions or waivers to this regulation that are consistent with controlling law and regulations. The DCS, G–3 may delegate this approval authority, in writing, to a division chief within the proponent agency or a direct reporting unit or field operating agency of the proponent agency in the grade of colonel or the civilian equivalent. Activities may request a waiver to this regulation by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the commander or senior

leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for specific guidance.

**Army management control process.**

This regulation contains management control provisions and identifies key management controls that must be evaluated.

**Supplementation.** Supplementation of this regulation and establishment of command and local forms are prohibited without prior approval from the DCS, G–3 (DAMO–RQ), 400 Army Pentagon, Washington DC 20310–0400.

**Suggested improvements.** Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, U. S. Army Intelligence Center and Fort Huachuca, ATTN: ATZS–ACS–AS, Fort Huachuca, AZ 85613–6000.

**Distribution.** This publication is available in electronic media only and is intended for command levels A, B, C, and D for the Active Army, the Army National Guard of the United States, and the U.S. Army Reserve.

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## **Chapter 1**

### **General**

#### **1–1. Purpose**

This regulation establishes procedures, rules, and responsibilities for—

- a.* Unmanned aerial vehicle (UAV) air vehicle operator/crewmember (AVO) training and standardization.
- b.* UAV aircrew training program (ATP).
- c.* UAV-related flight violations.
- d.* Command, control, operations, and use of Department of the Army (DA) UAVs.
- e.* DA UAV Standardization Program.
- f.* UAV safety of flight (SOF) messages.
- g.* UAV weight and balance.

#### **1–2. References**

Required and related publications and prescribed and referenced forms are listed in appendix A.

#### **1–3. Explanation of abbreviations and terms**

Abbreviations and special terms used in this regulation are explained in the glossary.

#### **1–4. Responsibilities**

*a.* The Secretary of the Army, or authorized representative (unless otherwise stated in this regulation), has authority for final decisions in Army UAV operations, as established by the National Security Act of 1947, Title 10, Section 3062, United States Code (10 USC 3062), as amended.

*b.* The Assistant Secretary of Defense (Public Affairs) (OASD(PA)) will approve requests to engage in public demonstrations/static displays.

*c.* The Chief of Staff, Army (CSA) will approve Army-wide grounding of an entire mission, type, design, and series (MTDS) fleet of UAV systems. This authority also applies to SOF messages discussed in chapter 6.

*d.* The Office of the Deputy Chief of Staff, G–3 (DCS, G–3) has staff responsibility for Army UAVs, including waiver authority.

*e.* The Deputy Chief of Staff, G–4 (DCS, G–4) will approve—

- (1) SOFs and aviation safety action messages (ASAMs) as discussed in chapter 6.
- (2) UAV weight and balance as discussed in chapter 7.

*f.* The Commander, U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH) will be responsible for:

(1) AR 95–23.

(2) UAV training and standardization literature for all intelligence, surveillance, and reconnaissance (ISR) related UAVs.

(3) U.S. Army UAV standardization and evaluation programs.

(4) Monitoring all UAV training evaluation and standardization.

(5) Performing UAV readiness management inspections, as appropriate.

*g.* The Commander, Aviation and Missile Command (AMCOM) will—

(1) Report UAV SOF/ASAM conditions and issue SOF/ASAM messages covered in chapter 6. UAV SOF/ASAM reporting responsibility for those UAV systems (UAVS) still under procurement action (system is under contract for procurement, but not yet formally fielded to U.S. Army organizations) and/or still under conditional fielding/release to U.S. Army organizations and under the management and/or responsibility of the program executive office (PEO) for Aviation as exercised through its project manager (PM) for UAVS, will be exercised by PEO Aviation and/or its PM UAVS or a designated representative.

(2) Be the technical proponent for weight and balance (chap 7).

*h.* The Surgeon General will coordinate health hazard assessment and other medical aspects relating to UAV operations, including appropriate references to medical standards pertinent to UAV personnel documented in AR 40–501.

*i.* The Commanding General (CG), U.S. Army Materiel Command (AMC) will direct overall command activities involving weight and balance (para 7–1a).

*j.* The CG, U.S. Army Training and Doctrine Command (TRADOC), in coordination with appropriate Headquarters, Department of the Army (HQDA) agencies, will develop and recommend the doctrine, concepts, material requirements, and organization of Army UAV elements. The CG, TRADOC will—

(1) Develop training, standardization, and evaluation literature for AVO training programs (chap 4).

(2) Oversee the overall training of weight and balance (chap 7–1b).

*k.* The CG, U.S. Army Aviation Center, Directorate of Evaluation and Standardization, will monitor UAV training evaluation and standardization, when and if appropriate.

- l.* The commanders of major Army commands (MACOMs) will—
  - (1) Ensure proper maintenance of AVO individual training folders (chap 2).
  - (2) Monitor the Army UAV Standardization Program (chap 4).
  - (3) Oversee SOF messages (chap 6).

#### **1–5. Management control evaluation checklist**

*a.* The regulation that prescribes policy, standards, responsibilities, and accountability for establishing and maintaining effective internal management controls is AR 11–2. It also provides guidelines for the execution of the Army internal management control program.

*b.* Appendix C is the applicable management control evaluation checklist. Managers will use the checklist as daily guidance and will formally complete the checklist as scheduled by the HQDA functional proponents in the annually updated management control plan. The checklist will be used following the guidance specified in AR 11–2. Specifically, the checklist will—

- (1) Test whether prescribed controls are present, operational, and effective. Analytical techniques, such as statistical sampling, should be used when appropriate to conserve resources.
- (2) Identify areas where additions or reductions to existing controls are needed.
- (3) Select corrective actions when deficiencies have been found that can be corrected locally.
- (4) Refer deficiencies that cannot be corrected locally to higher command levels for assistance in correcting those deficiencies.
- (5) Provide support for the commander's annual statement on the adequacy of internal controls within the organization.

#### **1–6. Deviations**

*a.* Individuals may deviate from provisions of this regulation during emergencies to the extent necessary to meet the emergency.

*b.* Individuals who deviate from the provisions of this regulation, Federal Aviation Administration (FAA) regulations, or host country regulations must report details of the incident directly to their unit commander. The incident must be reported within 24 hours after it occurs.

*c.* Alleged violations of Federal Aviation Regulation (FAR) 91 (14 CFR 91), host country regulations, and/or U.S. Military aviation regulations will be treated in accordance with paragraph 2–11.

#### **1–7. Waivers and delegation of authority**

*a.* Authority to grant waivers is stated in specific paragraphs of this regulation. Authority granted to MACOMs per this regulation may be further delegated by the MACOM commander except when expressly prohibited. All other commanders may not further delegate waiver authority unless authorized in the specific paragraph.

*b.* When waiver authority is not stated in specific paragraphs of this regulation, a waiver to provisions in chapters 2, 3, and 5 may be granted only by HQDA, Department of the Army Requirements Division (DAMO–RQ); in chapter 4, by HQDA, Department of the Army Military Office-Training (DAMO–TRO); and in chapters 6 and 7, only by HQDA, Department of the Army-Logistics (Aviation) (DALO–AV).

*c.* Waivers required to be processed through the FAA and/or a host nation should be coordinated/processed through the U.S. Army Aeronautical Services Agency (USAASA), as appropriate.

## **Chapter 2**

### **Unmanned Aerial Vehicle Management**

#### **2–1. Personnel authorized to fly Army UAVs**

*a.* The following personnel may fly/operate Army UAVs:

- (1) AVOs who—
  - (a) Are members of the Active Army, Reserve Component, or National Guard or are civilian components of the U.S. Army.
  - (b) Have complied with qualification, training, evaluation, and currency requirements of this regulation (chap 4) for the UAV system to be flown/operated.
- (2) Civilian employees of Government agencies and Government contractors who have—
  - (a) Appropriate military or civilian certifications or ratings in the system(s).
  - (b) Written authorization from the owning MACOM or Commander, USAIC&FH for units assigned to USAIC&FH.
- (c) Necessary compliance with qualification, training, evaluation, and currency requirements of this regulation (chap 4), the provisions of AR 95–20, and the contract and/or statement of work for the UAV to be flown.

- (d) At a minimum, a medical flight physical as stated in paragraph 2-1b or an FAA equivalent.
- (3) UAV crewmembers in other U.S. services who have—
  - (a) Complied with qualification, training, evaluation, and currency requirements of their service or of this regulation (chap 4) for the UAV system to be flown.
  - (b) Written authorization from their service and the owning MACOM commander.
  - (c) At a minimum, a medical flight physical as stated in paragraph 2-1b.
- (4) UAV crewmembers of foreign military services who have—
  - (a) Completed the course of instruction prescribed by an FAA equivalent or their country's aviation organization or service equivalent and have been awarded an appropriate UAV crewmember designation.
  - (b) Complied with qualification, training, evaluation, and currency requirements of their service or of this regulation (chap 4) for the UAV system to be flown.
  - (c) Properly completed a foreign service disclaimer.
  - (d) Written authorization, including a disclaimer from their government absolving the U.S. Government from liability (unless a disclaimer is included under the provisions of an approved exchange program). The appropriate host MACOM must provide written authorization that will include, as a minimum, the purpose and duration of the authorization.
- (5) Personnel listed in 2-1a(1) through (4) who are not qualified or current to operate the UAV to be flown, after receiving training directly supervised by an instructor pilot (IP) or standardization IP who is qualified and current in the UAV system to be flown.
- (6) Individuals receiving UAV crewmember instruction authorized by HQDA or HQDA-designated agencies. These personnel may fly/operate Army UAVs after training under an approved program of instruction or ATP.
  - b. All personnel who hold the military occupational specialty (MOS) 96U (Unmanned Aerial Vehicle Operator) or Career Management Field 96 or act as the AVO, mission payload operator (MPO), mission commander (MC), and/or external pilot (EP) for any Army UAV must meet the annual medical requirements documented in AR 40-501 regardless of rank or UAV assignment. All personnel stated above will undergo and successfully satisfy the requirements of at least a Class III Flight Duty Medical Examination as stated in AR 40-501. Failure to meet medical standards is disqualification for flying duties and constitutes loss of qualification for MOS 96U. This will result in automatic reclassification action in accordance with AR 614-200.

## **2-2. Personnel authorized to run up Army UAVs**

Those authorized to run up Army UAVs include—

- a. Personnel listed in paragraphs 2-1a(1) through (4).
- b. Other personnel who meet the requirements of paragraph 3-12.
- c. Contractor personnel operating per AR 95-20 who are authorized to start and run up Army UAVs under the provisions of the contract and approved procedures in accordance with the appropriate UAV system operator's manual.

## **2-3. AVOs prohibited from performing AVO duties**

The following crewmembers are prohibited from performing AVO aircrew duties:

- a. AVOs in nonoperational AVO positions.
- b. All AVOs attending nonflying courses of instruction of more than 90 days duration. For reinstatement of qualification or currency requirements, refer to guidance in chapter 4, section I.
- c. Those disqualified or temporarily suspended (including medical suspensions) or whose AVO status has been administratively terminated.
- d. AVOs in an authorized leave status, except—
  - (1) Army National Guard (ARNG) personnel while in an authorized leave status, such as military leave, law enforcement leave, or annual leave.
  - (2) Army Guard Reserve/Active Duty Special Support Work personnel performing National Guard State Active Duty.

## **2-4. UAV operator and maintenance checklists**

- a. The publications and forms required by DA Pamphlet (Pam) 738-750 for all UAV-associated vehicles and ground support equipment and DA Pam 738-751 for UAVs and UAV support equipment will be physically present for review by each AVO (AVO, MPO, and/or EP, if applicable) directly involved in the actual flight of the UAV prior to operation of any UAV system.
- b. AVO operator checklists will be used for all operations, from preflight through postflight/before leaving the UAV. While airborne, the use of the checklist will be accomplished to the extent that the mission requirements and safety will allow. During emergency situations, required checks may be accomplished from memory.
- c. Checklists will be used when making maintenance operational checks, maintenance test flights, and daily inspections.

d. Only DA-approved and current AVO manuals and checklists will be used.

## 2-5. Logging flying time

An entry will be made on DA Form 2408-12 (Army Aviator's Flight Record) for each flight or simulated flight by all AVOs indicating duties performed, mission, and flight condition. When recording flight time, use the following symbols:

a. *Duty.* Only one UAV AVO occupying a UAV flight crew station may use any one of these symbols for any time period. Crewmembers of UAV systems instructing or evaluating from a noncrewmember station will use the symbol for the duty being performed. Use the following symbols to record flight time when performing duties specified by the symbol:

- (1) AVO: air vehicle operator .
- (2) EP: external pilot.
- (3) EI: external pilot instructor.
- (4) IP: instructor pilot.
- (5) ME: maintenance test pilot evaluator.
- (6) MP: maintenance test pilot.
- (7) PO: mission payload operator.
- (8) SP: standardization instructor pilot.
- (9) UT: unit trainer.

b. *Mission.* Use the following symbols to record flight time when performing duties specified by the symbol:

- (1) A: acceptance test flight.
- (2) C: combat mission directly against the enemy within a designated combat zone.
- (3) F: maintenance test flight.
- (4) I: imminent danger.
- (5) R: relay mission.
- (6) S: service missions, other than A, C, F, I, R, T, or X.
- (7) T: training flight for individual qualification, refresher, mission, or continuation.
- (8) X: experimental test flight.

c. *Flight conditions.* Each crewmember will use only one of the following symbols to identify the condition or mode of flight for any time period:

- (1) D: day (between the hours of official sunrise and sunset).
- (2) N: night (between the hours of official sunset and sunrise).
- (3) S: simulator flight (flights conducted in an approved UAV synthetic flight training simulator/institutional mission simulator/other Army-approved UAV simulator).

d. *UAV configuration.* Each crewmember will use only the following symbols to identify the UAV mission sensor configuration:

- (1) A: air data relay.
- (2) C: communications relay.
- (3) D: day camera.
- (4) E: ELINT (electronic intelligence).
- (5) EW: electronic warfare payload.
- (6) IR: infrared day/night camera.
- (7) L: lethal payload.
- (8) LS: laser designator/laser illumination/laser marking/laser range finding.
- (9) M: minefield detection (airborne standoff minefield detection system (ASTAMIDS)).
- (10) NP: no payload.
- (11) S: SIGINT (COMINT) (signals intelligence (communications intelligence)).
- (12) O: other.

## 2-6. Computation of flying time

With the extended flight time capability of some UAVs, flying hour computation for the UAV may differ from that of the UAV crewmembers. Flying hour computation for a UAV starts when the UAV begins to move forward on the takeoff roll (or takeoff launch for rail launch operations), and ends when it has landed and the engines are stopped. However, flying hour computation for the individual UAV crewmembers will be logged/credited only for that portion of the in-flight operations during which the AVO is actually performing crew duty functions on the UAV and/or any of its mission/sensor systems.

## **2-7. Individual aircrew training folders**

- a. Each UAV AVO must present an individual AVO training folder (IATF) to the commander of the unit to which assigned or attached within 14 working days after signing into the unit.
- b. The flight experience and qualification data of each AVO will be documented in accordance with the appropriate UAV aircrew training manual (ATM) and kept on file for the—
  - (1) MC.
  - (2) AVO.
  - (3) MPO.
  - (4) EP.
- c. Commanders will keep and distribute required individual AVO training folders for all AVOs assigned or attached to their organization.
- d. Individual training records of active-duty AVOs who have an individual training record requirement will be closed out at the end of the birth month and/or when change occurs in his/her duty assignment.

## **2-8. Local flying rules**

- a. Installation commanders having Army UAVs assigned, attached, or tenant to their commands will prepare and publish local flying rules. Rules will include the use of tactical training and maintenance test flight areas, arrival and departure routes, and airspace restrictions as appropriate to control air operations with specific reference to rules governing/pertinent to UAV operations in/around their local flying areas.
- b. Installation commanders may set altitudes based on noise abatement, fly-neighborly policies, or other safety considerations. These will be displayed in flight operations and provided to the USAASA for publication in the Department of Defense (DOD) flight information publication (FLIP). AVOs will become familiar with and adhere to the appropriate published local area traffic pattern altitudes.
- c. When UAVs are authorized to operate in controlled airspace, Army air traffic control (ATC) facilities will use prescribed FAA separation procedures, when provided, for the category and type of flight being conducted. FAA procedures have not been established nor have UAVs been categorized for separation purposes.
- d. Operations outside of special use airspace (SUA) will be conducted in accordance with AR 95-2.
- e. Requests for deviations from FAA Order 7610.4, chapter 13, to operate UAVs outside of restricted areas will be processed through the appropriate DA Regional Representative (DARR) for the specific FAA region.

## **2-9. Special use airspace**

- a. AR 95-2 sets Army policy and procedures for handling SUA matters.
- b. Operations in SUA will be conducted per instructions from the using agency.
- c. In combat zones, airspace use, control, and management will be conducted per Joint Publication (JP) 3-52, in accordance with FM 3-52. Air traffic control services will be provided per FM 1-120.
- d. Unless approval is granted in advance through the appropriate DARR, all UAV flights/operations will be conducted in the appropriate SUA, per AR 95-2. Any UAV flight operations not conducted in SUA must comply with AR 95-2 and FAA Order 7610, unless exemption to the chase plane requirement is coordinated and approved in writing, in advance, from appropriate authority.
- e. Restricted areas established for the purpose of aircraft operations may also be activated for UAV operations with prior coordination with appropriate agencies.

## **2-10. Unmanned aerial vehicle lighting requirements**

- a. Army UAVs will be illuminated to at least the minimum standards required by the country in which the flight operations occur.
- b. UAV anticollision lights/strobe lights will be ON when UAV engines are operating, except—
  - (1) When there may be hazards to personnel or equipment/system safety.
  - (2) When conducting night-time operations in/over a hostile, sensitive, and/or combat environment.
  - (3) With prior coordination with the respective airspace manager.
- c. Position lights will be ON between official sunset and sunrise.
- d. Night lighting requirements, including exceptions to a, b, and c above, will be as prescribed in unit standing operating procedures (SOPs) and training missions.
- e. UAV lighting requirements will be conducted as directed by the special instructions published in the airspace control order, along with other means of identification, friend or foe guidance.

## **2-11. Flight violations**

Policies and procedures for reporting and investigating alleged flight rules violations are—

- a. *Violations.* Any violation of FAA, International Civil Aviation Organization (ICAO), host country, and/or any

other pertinent aviation regulation will be reported. Any person witnessing or involved in a flight violation involving civil or military aircraft, including UAVs, will report the violation as soon as possible.

(1) Violations by military aircraft/UAVs will be reported to one of the following:

- (a) The commander of the unit, activity, or installation (if known) to which the aircraft belongs.
- (b) The DARR of the FAA region in which the alleged violation took place (see AR 95–2 for addresses).
- (c) The Director, USAASA, Fort Belvoir, VA 22060–5582.
- (d) The U.S. Army Aeronautical Detachment, Europe, if the incident took place in its area of responsibility (see AR 95–2 for addresses).
- (e) The 8<sup>th</sup> Army Air Traffic Control, U.S. Forces Korea, ATTN: U.S. Army Air Traffic Control & Airspace Coordinator's office, if the incident took place in its area of responsibility (see AR 95–2 for addresses).
- (f) U.S. Army Criminal Investigation Command, in accordance with AR 195–2, if the violation results in significant property damage/destruction, serious injury, or death.

(2) Violations by civil aircraft should be reported to one of the following:

- (a) The Flight Standards District Office for the FAA region in which the alleged violation took place.
- (b) The FAA Communications Center, Washington, DC 20591.
- (c) The DARR of the FAA region in which the alleged violation took place (see AR 95–2 for addresses).
- (d) The Director, USAASA, Fort Belvoir, VA 22060–5582.
- (e) The U.S. Army Aeronautical Detachment, Europe, if the incident took place in its area of responsibility (see AR 95–2 for addresses).
- (f) The 8<sup>th</sup> Army Air Traffic Control, U.S. Forces Korea, ATTN: U.S. Army Air Traffic Control & Airspace Coordinator's office, if the incident took place in its area of responsibility (see AR 95–2 for addresses).

(3) Names of crewmembers of military aircraft/UAVs involved in actual or alleged violations will be treated as restricted information and not be released to the public or any agency outside the DOD, except by proper authority. Any person receiving requests for names of crewmembers of Army aircraft/UAVs should direct such inquiries to the Director, USAASA (see para 2–11a(1)(c)).

*b. Information reported.* To report an alleged violation, use a letter or memorandum format. Neither DA Form 2696 (Operational Hazard Report) nor DA Form 4755 (Employee Report of Alleged Unsafe or Unhealthful Working Conditions) is normally used to report flight violations. When reporting an alleged violation, as much information as possible should be given, to include—

- (1) Type and make of aircraft/UAV.
- (2) Tail number.
- (3) Name of mission commander (see para 2–12b).
- (4) Unit assigned, if military.
- (5) Location where aircraft/UAV is based.
- (6) Description of alleged violation, including—
  - (a) Specific reference to regulations violated.
  - (b) What happened.
  - (c) Time and date the alleged violation occurred.
  - (d) Where the alleged violation occurred.
- (7) Name and phone number of the individual reporting the alleged violation.
- (8) Names, addresses, and phone numbers of additional witnesses, if any.
- (9) Other pertinent information.

*c. Investigation.*

(1) Reports of alleged violations received from the FAA, ICAO, or a host country will be investigated under the provisions of AR 15–6.

(2) Commanders receiving a report of violations from sources other than those listed in paragraph 2–12c (1) will first determine if it involves personnel or aircraft/UAVs under their command and, if necessary, initiate an investigation under AR 15–6.

(3) Based on the outcome of the investigation, commanders will take appropriate administrative, judicial, or nonjudicial action.

(4) Results of investigations conducted per AR 15–6 will be reported through channels to the Director, USAASA, Fort Belvoir, VA 22060–5582. The report will include the findings of the investigation, the corrective action taken or proposed, any conclusions derived, the type of disciplinary action taken (if any), and any other pertinent information. This report must reach the USAASA within 60 days of the commander receiving notification of the alleged violation unless the immediate commander cannot complete the investigation or the administrative or disciplinary action within this time. In this case, an interim report will be forwarded detailing the reasons for the delay.

(5) Under no circumstances will a report of investigation prepared under the provisions of this regulation be released outside of DOD, except in accordance with the Freedom of Information Act (FOIA) or Privacy Act, as implemented by

AR 25–55 and AR 340–21. All requests for information under the FOIA or Privacy Act will be referred to the installation or unit FOIA/operations security coordinator for processing in accordance with AR 25–55 or AR 340–21.

## **2–12. Briefing officers**

*a.* Mission briefing officers will normally be members of the UAV unit chain of command/supervisory chain (not lower than platoon leader/warrant officer/noncommissioned officer in charge) or the operations officer/ noncommissioned officer in charge. Commanders in the grade of lieutenant colonel and above may designate, in writing, other briefing officers when the unit chain of command does not exist or when designated briefing officers cannot brief because of official duties or absences. Briefing officers will be selected based upon experience and level of responsibility in the unit. Self-briefing is not authorized unless approved by the first lieutenant colonel or above in the chain-of-command. Briefing officers will be limited to the number needed to meet operational requirements.

*b.* Briefing officers will brief key mission elements to the MC. Mission briefing officers will, as a minimum, ensure the following key areas are evaluated in the mission planning sequence:

- (1) The flight is in support of an operational unit mission or has been authorized by the unit commander.
- (2) AVOs have been allocated adequate premission planning time.
- (3) AVOs are qualified and current for the mission in accordance with this regulation and the commander's flight crew qualification and selection program (see chap 4, sec II).
- (4) Forecast weather conditions for the mission meet the requirements of this regulation and local directives.
- (5) AVOs meet unit crew endurance requirements.
- (6) Procedures in the commander's risk management program have been completed for the mission and risks are reduced to the lowest level possible.
- (7) Required special mission equipment is maintained in accordance with published guidance.

*c.* Briefing officers will use DA Form 7525 (UAV Mission Schedule/Brief). Instructions for completing DA Form 7525 are provided in appendix B. Copies of the mission briefing form will be retained in unit files for at least 30 days.

## **2–13. Noise abatement**

- a.* Noise-abatement policies will be disseminated by the Director, USAASA.
- b.* AVOs will participate in noise-abatement and fly-neighborly programs to minimize annoyance to persons on the ground.
- c.* Noise sensitive areas will be treated in accordance with the applicable FAR and local SOPs.

# **Chapter 3 Operations and Safety**

## **Section I Use of Army UAVs**

### **3–1. General**

Army UAVs will be used for official purposes only. UAV use must comply with paragraph 3–2 and must not be prohibited by paragraph 3–4 of this regulation. The only authorized classes of missions designated for an Army UAV are operational use and, as approved, special use.

### **3–2. Operational use missions**

*a.* Operational use missions include those missions required to accomplish the Army's mission and to maintain the combat readiness of UAV and ground units. These UAV missions are:

- b.* Actual or simulated tactical and/or combat operations.
- c.* AVO training.
- d.* Battle management.
- e.* Flight tests.
- f.* Friendly force coverage/force protection.
- g.* Intelligence collection/gathering.
- h.* Maintenance flights.
- i.* Research and development.
- j.* Special use (see para 3–3).

### **3–3. Special use missions**

Unless specified, approval authorities for missions authorized in this paragraph are MACOM commanders. They may

delegate approval authority not lower than installation commanders. In addition to operational missions, Army UAVs may be used for the following purposes:

- a.* Aerial demonstrations in support of civil or military official functions.
- b.* Static demonstrations not on a military installation, as performed in support of community relations' activities, will comply with AR 360-1.
- c.* Units assigned an aerial demonstration mission within the continental United States will comply with FAR 91. Aerial demonstrations not on a military installation will not be conducted until coordinated with the appropriate DARR. The DARRs are listed in AR 95-2, table 6-1, and in the Army Aviation Flight Information Bulletin.
- d.* Units assigned an aerial demonstration mission outside the continental United States will comply with published MACOM, host nation, and ICAO regulations.
- e.* Flights conducted in the local area only, as defined in local SOPs.
- f.* UAV support of community relations and public information, if approved, in accordance with AR 360-1.

### **3-4. Prohibited missions**

- a.* Army UAVs will not be used to conduct flights for personal use.
- b.* Army UAV operations will not be conducted outside of those areas identified in paragraph 2-9.
- c.* Army UAVs will not be operated in a manner outside of the definition of public aircraft (49 USC 40102(a)(37)).

## **Section II Safety**

### **3-5. Safety functions**

Commanders will implement the mishap prevention program set up by AR 385-95.

### **3-6. Mishap reports, investigations, and release of information**

- a.* Procedures for investigating and reporting UAV mishaps will be in concert with those prescribed in AR 385-40. UAV and UAV system mishaps will be investigated as cited in paragraph 2-4*a* of AR 385-40; however, the final mishap report for UAVs/UAV systems will be reported using DA Form 285 (U.S. Army Accident Report), as stated in paragraph 2-4*n* of the same AR.
- b.* Policy and procedures for reporting casualties and notifying next of kin of personnel involved in accidents are prescribed in AR 600-8-1.
- c.* Requests for information under the FOIA will be processed per AR 25-55.

### **3-7. Risk management**

- a.* Commanders will integrate risk management into UAV mission planning and execution at every level. TC 1-210, chapter 5, and the UAV aircrew training manuals will be used as guides for implementation of this program.
- b.* The risk management process begins at mission conception and continues until mission completion. The process is applied with the goal of eliminating hazards where possible and reducing residual risks to acceptable levels.
- c.* When possible, the hazard assessment step of the process should be documented by the mission developer/planner. TC 1-210, chapter 5, explains formalized assessments. File assessment documentation with the UAV mission briefing in accordance with FM 1-300.

### **3-8. UAV safety procedures**

- a.* Commanders will refer to AR 40-8 in establishing safety procedures in their local unit SOPs, as appropriate for their unit and mission.
- b.* No person will operate a UAV in a careless or reckless manner that would endanger life or property.
- c.* No person will be an AVO if his or her physical or psychological condition might be detrimental to safety.
- d.* Consumption of alcoholic beverages is prohibited 12 hours prior to conducting UAV operation and no personnel will conduct any UAV equipment or UAV support equipment operations under conditions where their blood alcohol concentration is at or over 0.08 grams of alcohol per 100 milliliters of blood.
- e.* The MC will ensure that the following safety measures are observed:
  - (1) Smoking is prohibited within 50 feet of a UAV and/or any of its associated ground equipment.
  - (2) Smoking is prohibited within 50 feet and/or inside of the ground control station (GCS), the launch & recovery site (LRS), the mission planning station, and/or at an EP's flight control box positions.
  - (3) Only explosive ordnance detonation personnel will dispose of a rocket-assisted take off (RATO) booster and/or any explosive ordnance components that have misfired.
- f.* All self-medication will be in accordance with procedures set forth by the unit commander in or through the local SOPs in concert with guidance reflected in AR 40-8 and applicable Aeromedical Policy Letters.

g. Refer to FM 21–60 and/or appropriate system technical manual for signals to be used to direct and control the operation and movement of a UAV.

h. Positive two-way communications will be established and maintained with appropriate installation or government agency airfield or ATC facility prior to and during the entire UAV flight.

### 3–9. Crew endurance

a. Commanders will design a crew endurance program tailored to their unit mission and include it in their SOPs. Table 3–1 is provided as a guide for scheduling AVO duty periods.

**Table 3–1**  
**Crew endurance guide**

Time period (days) <sup>1</sup>	Maximum duty period (hours)	Maximum flight time (hours)	Environment relative factors
1 to 7	14	10	Day 1.0
7	84	48	Night 1.4
14	160	88	Mission-oriented protective posture IV 2.0
30	320	90 peacetime 140 mobilization	

<sup>1</sup>UAV crewmembers should be afforded quality, uninterrupted sleep to prevent fatigue, unclear thinking, and poor decisionmaking that could result in unsafe UAV operations.

b. Crew endurance is an integral part of the overall risk management program. It is used to control risks due to sleep deprivation or fatigue and to prescribe thresholds to trigger command decisions as to whether or not to accept those risks.

c. Commanders should consider the advice of flight surgeons and aviation safety personnel in designing their crew endurance programs.

### 3–10. DA Form 4755 (Employee Report of Alleged Unsafe or Unhealthful Working Conditions)

DA Form 4755 will be used to notify commanders and safety councils of anything affecting the safety of Army UAVs or related personnel and equipment. The commander will report hazards investigated immediately and correct unsafe conditions (see AR 385–10 for instructions on completing DA Form 4755).

## Section III

### UAV Maintenance

#### 3–11. Maintenance test flights

a. Maintenance test flights (MTFs) will be conducted per Technical Manual (TM) 1–1500–328–23 or appropriate UAV technical manual guidelines.

b. Maintenance test flights for UAVs that have been provided to a contractor, as government-furnished equipment, will be flown/conducted consistent with the provisions of the contract between the government and the contractor.

c. UAV crewmembers performing maintenance test flights must be qualified and current (see para 4–24 or 4–25).

#### 3–12. Maintenance and operations check

a. Only authorized personnel will perform maintenance and operational checks (MOCs) on UAVs per DA Pam 738–750, DA Pam 738–751, TM 1–1500–328–23 (or current memorandum of agreement for newly acquired systems), and appropriate UAV technical manuals, as applicable.

b. Personnel who are authorized to start, run up, and taxi UAVs for the purpose of maintenance operational checks and are not qualified per paragraph 2–1a(1) through (4) will—

(1) Undergo appropriate normal and emergency procedures training conducted by an standardization instructor pilot (SP) or maintenance test flight evaluator (ME) in the specific MTDS UAV for which the maintenance operational checks are to be performed.

(2) Be evaluated semiannually by an SP or ME on all functions they are required to perform.

(3) Have written authorization from the commander. This authorization must specify the operations and checks permitted and be posted in their individual ATM records and the maintenance office.

c. Commanders may authorize nonqualified personnel to start, operate, and stop mobile power units (MPUs). These personnel will—

- (1) Be trained on all functions they are authorized to perform by MPU-qualified maintenance personnel.
- (2) Have written authorization by the commander and posted per the unit SOP.

## **Section IV**

### **Army UAV Performance Records**

#### **3-13. Requests for performance records**

The policy for handling requests from the services for authority to establish performance records by military aircraft/UAVs is prescribed in DODI 5410.19. It authorizes periodic official demonstrations of military aircraft for the purposes of establishing new performance such as speed and endurance records.

#### **3-14. Purpose of performance records**

The following policies apply to the use of Army UAVs for the purpose of performance records.

- a. Only service UAVs will become eligible to establish new performance records. These UAVs will be eligible 6 months after the first UAV is delivered to an operational unit.
- b. Service requests to engage in public demonstrations to establish performance records and release information on new performance records will be submitted to OASD(PA), for approval or disapproval, after coordination —
  - (1) By OASD(PA) within DOD.
  - (2) With other appropriate departments of the Government (for example, FAA, Department of Transportation, and so on).
  - (3) With the National Aeronautics Association.
- c. Requests in paragraph b above will be accompanied with a description of the specific UAV, full justification of the purpose of the record attempt, flight plans, and information supporting the attempt.
- d. Requests by MACOMs for authority to establish performance records by military UAVs will be submitted to HQDA (DAMO-FDV), Washington, DC 20310-0460, at least 60 days prior to any proposed record establishment attempt.

## **Chapter 4**

### **Training**

#### **Section I**

#### **Training Program and Literature**

##### **4-1. General**

The UAV ATP will be in accordance with TC 1-210 and the appropriate UAV ATM.

##### **4-2. Waivers to training requirements**

- a. Unit waivers to primary UAV ATP requirements may be granted only by the following:
  - (1) Commanders of MACOMs.
  - (2) Commander, U.S. Army Reserve Command.
  - (3) Chief, National Guard Bureau (NGB).
- b. Individual waivers to primary UAV ATP requirements may be granted by the first commander, colonel or above, in the individual's chain of command.
- c. Waivers will state the specific requirement that is to be waived.

##### **4-3. Publications**

Operator's manuals and checklists are the primary references governing the operation of a specific UAV. ATMs, field manuals, technical manuals, and training circulars will be used as required. When differences exist between other publications and this regulation, this regulation has precedence. DA Form 2028 (Recommended Changes to Publications and Blank Forms) recommending changes to these publications will be submitted through the UAV unit commander to the proponent of the manual.

##### **4-4. Aircrew information reading files**

Units will establish and maintain AVO training and information reading files in accordance with AR 385-95 and TC 1-210. Assigned and/or attached AVO personnel will read and remain familiar with these files.

##### **4-5. Aircrew training program**

- a. The UAV ATP standardizes AVO training and evaluations to ensure combat readiness.

b. The ATP outlined in the UAV ATM is mandatory for all AVOs assigned to operational flying positions in UAV units (that is, AVO, EP, IP, MC, ME, MP, MPO, and SP) as specified in UAV ATMs. The UAV ATP includes requirements for hours, tasks, and iterations identified in appropriate UAV ATMs; UAV simulator; readiness level (RL) progression; and the annual proficiency and readiness test (APART). AVOs assigned or attached to another service will meet the training program requirements of that service. DA civilian AVOs will be trained and evaluated as specified in writing by the commander as necessary to meet the requirements of their military support job description.

c. The unit commander may excuse an AVO scheduled for retirement or separation from active duty from all ATP requirements. The AVO may be excused beginning no sooner than 6 months before scheduled retirement or separation date. However, AVOs who are excused are prohibited from performing further AVO flight duties.

#### **4-6. AVO qualification/refresher training**

##### *a. Qualification training.*

(1) Formal training at other DA designated training bases may be conducted upon receipt of approval by Commander, USAIC&FH.

(2) Unless otherwise approved by HQDA (DAMO-TRO), local transition training will not be conducted when a formal DA qualification course exists. Exceptions may be granted on an as required basis by HQDA (DAMO-TRO), in which case training will be in accordance with an appropriate MACOM approved program of instruction.

(3) To ensure standardization throughout the Army UAV community, flight training will be conducted using the training and evaluation requirements prescribed in the appropriate UAV ATM.

(4) Training an AVO in a UAV category other than that in which he or she is qualified to fly/operate, is permitted only in a formal school course (DA Pam 351-4).

(5) Those AVOs who successfully complete qualification training conducted by the Army or other U.S. military service will be awarded an additional MOS or additional skill identifier (see AR 611-1).

(6) A statement of completed UAV and/or UAV system qualification (such as day camera, electro-optical/infrared sensor, synthetic aperture radar (SAR), ASTAMIDS, and so on) will be entered into the AVO's IATF. The personnel officer will include the statement in the member's military personnel records.

b. *Refresher training.* When a UAV crewmember has not flown within the past 180 days, he or she will receive the appropriate flight refresher training prescribed in the appropriate UAV ATM. The gaining command is responsible for the refresher training, except for crewmembers assigned to overseas commands for duty in an operational UAV flying position. If reassigned overseas, the losing command is responsible for the training. When the losing command does not have training resources available, they will request assistance from the next higher headquarters.

#### **4-7. Annual proficiency and readiness test**

a. The APART measures an AVO's readiness status. It consists of a written examination and a hands-on performance test evaluated by an IP/SP. An RL1 AVO must pass each component of the test during the APART period, the 3-month period ending on the last day of the operator's birth month. At the end of the training year, the commander must certify that each UAV operator has completed all APART requirements; this action also serves to re-certify the operator in his or her designated duty position(s). An AVO receives credit for the written examination and hands-on performance tests during RL training if the tests are completed within the 3-month APART period. AVOs participating in RL3 or RL2 training programs are not subject to the APART unless designated by the commander on an individual's critical tasks list or removed from RL1 status because of a training deficiency.

b. The APART will be conducted and maintained in accordance with TC 1-210 and the appropriate UAV ATM. The APART is given to each RL 1 UAV AVO and RL 1 Department of the Army Civilian (DAC) AVO within the APART period. For DAC AVOs, individual components of the APART may be accomplished in any calendar quarter designated by the commander.

c. AVOs who fail to meet APART standards will be processed in accordance with appropriate directives, for example, reclassification, retraining, and so on.

#### **4-8. Emergency procedures training**

Training in emergency procedures will be conducted per the appropriate UAV ATM. A qualified IP or SP who is current in that MTDS of UAV system will be present and in a position to gain immediate access to the required controls/console.

#### **4-9. Hands-on performance test**

Each AVO must successfully complete periodic hands-on performance tests conducted by an IP, SP, or ME, as applicable, per the appropriate UAV ATM/ATP. Hands-on tests are:

a. *Standardization flight evaluation.* The flight consists of visual flight maneuvers and/or procedures conducted in each UAV MTDS group (para 4-15) an AVO is required to fly/operate. The evaluation will—

(1) Be conducted as described in the appropriate ATM.

(2) Be conducted by a designated IP or SP to establish initial qualification in a UAV series and once each year during the APART.

(3) The commander may direct use of a compatible UAV flight simulator if circumstances preclude safe, affordable, or timely evaluation in the UAV (except for those EP duties requiring actual takeoff and landing performance evaluation).

*b. Proficiency flight evaluation.* The evaluation is administered to any AVO in an operational flying position (AVO, MC, MPO, or EP if appropriate for the series of UAV) in any UAV series group (para 4–15) or UAV system he or she is required to fly/operate. The evaluation will be conducted—

- (1) At the discretion of the commander.
- (2) At the direction of HQDA.
- (3) By an IP, SP, or ME per the appropriate ATM/ATP.
- (4) To determine an individual's proficiency and/or currency.
- (5) To determine which phase of UAV training is appropriate for entry into or continuing in the ATP.
- (6) No-notice evaluations may be written examinations, oral examinations, UAV flight evaluations, or compatible UAV simulator evaluations.

*c. Postmishap flight evaluation.* This flight evaluation is administered to a UAV AVO to determine his or her ability to perform required duties following a UAV mishap. UAV AVOs performing crew duties involved in a Class A or B mishap will be suspended from flight duties until successful completion of a flight evaluation. The evaluation will be conducted in the same MTDS UAV in which the mishap occurred. UAV AVOs performing crew duties involved in a Class C mishap may be suspended from flight duties and required to successfully complete a flight evaluation at the discretion of the commander. An IP or SP will conduct the evaluation in accordance with the appropriate UAV ATM (see AR 40–501 for medical release requirements prior to flight).

*d. Medical flight evaluation.* This flight evaluation measures an AVO's (AVO, EP, or MPO) ability to perform required duties after incurring a medical disability. The evaluation will be administered upon the recommendation of the flight surgeon, or appropriate medical authority. The evaluation of flight duties will be conducted by an IP or SP in accordance with the appropriate ATM.

*e. MP evaluator and MP evaluation.* This evaluation encompasses maintenance test flight maneuvers and is conducted in each UAV series group (para 4–15) in which the AVO is required to test fly. The evaluation will be conducted—

- (1) To establish MP/ME qualifications in accordance with the appropriate ATM.
- (2) By a designated UAV ME qualified and current in the UAV series group to be flown.
- (3) During the APART in the primary UAV system and during each training year in alternate and/or additional UAVs.

#### **4–10. Failure to meet ATP requirements**

*a.* When ATP requirements are not met, the commander will investigate. The commander will complete the investigation within 30 days of notification of the failure. After investigating, the commander will—

- (1) Take one of the following actions:
  - (a)* Authorize the AVO up to a 30-day extension to complete the requirements. AVO-qualified commanders are not authorized to grant themselves a 30-day extension.
  - (b)* Request a waiver of requirements per paragraph 4–2b.
- (2) Enter restrictions imposed and extensions granted into the AVO's IATF.
- (3) Enter extensions and waivers for the AVO into that operator's IATF.
- (4) Restrict the AVO from performing MC duties in the UAV system until ATP requirements are successfully completed.

*b.* For primary UAVs, if additional time or waiver is not granted, or if requirements are not met within the authorized period, the commander will suspend the AVO from further AVO duties.

*c.* Additionally, an AVO who fails a hands-on performance test will be restricted from performing the flying duty (para 2–3) for which evaluated. The restriction will apply to all UAVs with similar operating and handling characteristics as listed in paragraph 4–15. Restrictions will be listed in the operator's IATF and will remain in effect until successful completion of a re-evaluation.

- (1) When the failure is in the AVO's primary UAV, the commander must:
  - (a)* Redesignate the individual to the appropriate RL.
  - (b)* Authorize additional training if necessary.
  - (c)* For qualified UAV AVOs, re-evaluate or impose a temporary suspension from flying duties.
  - (d)* For nonqualified AVOs, re-evaluate or remove the individual from UAV AVO duties.
- (2) When the failure is in an AVO's additional or alternate UAV, the commander must:
  - (a)* Redesignate the individual to the appropriate RL.
  - (b)* Authorize additional training if necessary.

(c) Re-evaluate, re-train or restrict the AVO from performing duties in that UAV.

#### 4-11. UAV simulator training requirements

- a. UAV AVOs may receive up to one fourth of their semiannual flight hour credit requirements utilizing a compatible simulator.
- b. UAV simulators are listed in table 4-1.

**Table 4-1**  
**Synthetic UAV flight training systems**

Compatible UAV	Simulator
RQ-5A, Hunter	HUNTER Institutional Mission Simulator (IMS)
RQ-2A, PIONEER	PIONEER Operational flight trainer
RQ-1A, PREDATOR	PREDATOR Operational flight trainer
RQ-7A, SHADOW 200	SHADOW 200 Ground Control Station (w/ imbedded Simulator capability)

#### 4-12. Aeromedical training

UAV AVOs will receive UAV-tailored aeromedical training per TC 1-210, as tailored for UAV AVO personnel and the appropriate UAV ATM.

#### 4-13. Deck landing operations training

- a. If deck landing operations are contemplated/anticipated, UAV flight crewmembers must complete deck landing qualification and be current in accordance with the most current Army/Air Force Deck Landing Operations Memorandum of Understanding (MOU) prior to conducting naval deck landing operations.
- b. Units may obtain a copy of the most current Army/Air Force Deck Landing Operations MOU by writing to HQDA (DAMO-TRO), Washington, DC 20310-0460.

#### 4-14. Currency

If more than 45 days (daylight) or 90 days (night) for the EP, or 90 days for either the AVO or MPO, have elapsed since the last flight/operation of the UAV MTDS (or series or group, para 4-15), the UAV crewmember will be administered a proficiency flight evaluation per the appropriate UAV ATM. (Per para 4-6b, if more than 180 days have elapsed, then refresher training is mandatory, versus a mandatory proficiency flight evaluation.) Criteria referenced herein refer to full-scale UAV operations.

#### 4-15. Similar UAVs

Currency in one series UAV will satisfy the requirement for all UAVs within the series or group; separate currency is required for all other UAVs. Series UAV systems with similar operating and handling characteristics are listed below:

- a. BQM-117, EXDRONE.
- b. FQM-151A, POINTER.
- c. RQ-1A, PREDATOR.
- d. RQ-2A, PIONEER.
- e. RQ-4A, GLOBAL HAWK.
- f. RQ-5A, HUNTER.
- g. RQ-7A, SHADOW 200 (TUAV).
- h. RQ-8A, FIRESOUL.
- i. Follow-on (other) UAV.

## Section II

### Flight Crewmembers

#### 4-16. Flight crews

UAV unit commanders must establish, in writing, formal UAV flight crewmember qualification and selection programs. Programs will contain qualification and selection criteria and evaluation requirements. UAV instructor pilots and safety personnel will aid commanders in the selection process. UAV flight crewmembers (AVOs) will be designated in writing by their unit commander, who will specify the UAV duties and AVO stations that the AVOs are

authorized to occupy in accordance with TC 1–210. Flight crews will be evaluated during the APART period in each flight control crew station at which they are authorized to perform AVO duties.

#### **4–17. Air vehicle operator**

The AVO controls and/or monitors the actual flight of the UAV from within a GCS, LRS, portable GCS, or similar device. This is normally done through the use of a monitor and not by direct visual contact with the UAV.

#### **4–18. External pilot**

The EP is the UAV crewmember responsible for the actual takeoff and landing of the UAV, for those UAV systems requiring specifically designated crewmembers (that is, those systems not incorporating an automatic takeoff and/or landing capability, where the AVO is responsible for UAV takeoff and/or landing operations).

#### **4–19. Mission commander**

The UAV unit commander will designate an individual as MC. The MC is responsible for control over all flight operations from premission planning through postmission operations/debriefing, to include information dissemination. (An MC will log flight time only if and/or when he or she is also involved in the actual flight control of an UAV, for example, while acting as the AVO, MPO, or, if applicable, performing EP duties.)

#### **4–20. Mission payload operator**

The MPO is responsible for operation of the onboard payload/sensor/collection systems necessary to obtain the required video imagery, signals intercept, and/or other intelligence/ information products, or in the operation of another UAV payload system's onboard sensors/payloads.

#### **4–21. Instructor pilot**

*a.* The IP will train and evaluate AVOs and other personnel in designated UAV systems in accordance with the appropriate ATM.

*b.* Qualified IPs must be designated in writing by the unit commander and be qualified and current in the UAV to be flown.

*c.* An IP candidate will have at least—

(1) Two hundred hours of AVO time in the UAV in which IP duties are to be performed.

(2) Seventy-five hours as MC in the UAV in which IP duties are to be performed.

(3) The minimum semiannual flight hour requirements within the previous 6 months in the UAV in which IP duties are to be performed.

(4) One hundred hours of EP time in the UAV in which EP IP duties are to be performed (for those UAV systems requiring EP functions).

(5) Fifty landings and takeoffs each in the UAV in which EP IP duties are to be performed (for those UAV systems requiring EP functions).

(6) A letter of recommendation from a unit SP.

*d.* Waiver authority for paragraph 4–21c(1) through (4), and (5) above is Commander, USAIC&FH or a designated representative. Waiver consideration will be case by case as substantiated in 4–21c(6) above. Authority for individual and unit UAV ATP waivers is found in paragraph 4–2.

#### **4–22. Standardization instructor pilot**

*a.* The SP will primarily train and evaluate IPs and other SPs and have technical supervision of the unit UAV Standardization Program as specified by the unit commander. The SP is the commander's technical advisor; advises the commander on all levels of UAV standardization within the command; and assists the commander to develop, implement, evaluate, and manage the unit's UAV ATP.

*b.* Qualified IPs will be designated in writing as SPs by the unit commander and be qualified and current in the UAV to be flown/operated.

#### **4–23. Unit Trainer**

The UAV unit commander may appoint unit trainers (UTs) to conduct specialized training to assist in unit training programs. UTs are prohibited from conducting emergency maneuvers or emergency procedures training. UTs are also prohibited from evaluating ATM base and special tasks. Commanders may authorize UTs to instruct from the AVO, MPO, or, if appropriate, EP stations. They may also authorize UTs to validate successful completion of required training, for example, border and corridor qualifications, local area orientation, and other locally directed requirements. When performing UT duties, the UT must be qualified per the appropriate ATM and current in the UAV being flown/operated.

#### **4-24. Maintenance test pilot**

- a. UAVs with test flight procedures published in an appropriate ATM will be test flown by qualified MEs/MPs only.
- b. To become qualified as an MP, AVOs must successfully complete an evaluation administered by a ME selected by the UAV unit commander.
- c. Qualified MPs must be designated, in writing, by UAV unit commanders. They must be qualified and current in the UAV to be flown and meet standardization requirements of the appropriate ATM. MPs must comply with procedures in the appropriate UAV MTF manual.
- d. Contractor MPs/operators will be qualified in accordance with the provisions of AR 95-20.

#### **4-25. Maintenance test pilot evaluator**

- a. The ME will train and evaluate MPs and other MEs in the designated UAV per the appropriate ATM.
- b. The ME will have at least 50 hours of MP time in the UAV for which ME duties are required.
- c. Qualified MPs will be designated in writing as MEs by UAV unit commanders.
- d. Commanders may authorize MEs to instruct and evaluate from the AVO, EP, and/or MPO stations, depending on the intent of the maintenance test flight.

#### **4-26. Requirements for UAV crewmembers**

- a. *Rated UAV crewmembers (AVOs).* A rated UAV crewmember will be—
  - (1) A graduate of a TRADOC-approved UAV system program of instruction, or service equivalent, for the UAV in which the crewmember duties (AVO, MC, MPO, and, if applicable, EP) are to be performed.
  - (2) In a position on the modified table of organization and equipment (MTOE) or table of distribution and allowances (TDA), per DA Pam 611-21.
  - (3) MOS qualified to perform specific UAV flight duties (AVO, MC, MPO, EP, and so on).
  - (4) Trained to perform their duties in accordance with the appropriate ATM/UAV ATM, systems technical manuals, and/or unit training SOP.
- b. *Nonrated UAV crewmembers.* Nonrated UAV crewmembers (data exploiters, observers, mechanics, technicians, and so on) perform duties on the UAV that are essential to the operation of specific flight missions. They will be—
  - (1) In a position on the MTOE or TDA per DA Pam 611-21.
  - (2) MOS qualified to perform specific UAV support missions (for example, data exploiter, observer, and so on).
  - (3) Trained to perform their duties in accordance with the appropriate ATM/UAV ATM, systems technical manuals, and/or unit training SOP.

### **Section III Standardization**

#### **4-27. UAV Standardization Program**

- a. The UAV Standardization Program is designed to ensure a high degree of efficiency in accomplishing the combat mission of the UAV force. This will be achieved by command supervision, employment of standard AVO tasks, use of standard publications, and maintenance of a disciplined AVO force by administration of frequent tests and flight evaluations.
- b. Commanders will—
  - (1) Implement standardization policies and procedures.
  - (2) Ensure that Army UAVs are operated according to standard procedures in ATMs and operator's manuals.
  - (3) Designate instructors, examiners, evaluators, and unit trainers in support of installation standardization committees.
  - (4) Ensure that required training, tests, and flight evaluations are completed.
  - (5) Review and approve policies of standardization programs.

#### **4-28. U.S. Army Intelligence Center and Fort Huachuca**

The USAIC&FH is the proponent agency for the U.S. Army's ISR UAV Standardization Program and will lead coordination of DOD-wide UAV Standardization Program efforts. In addition to the responsibilities listed in paragraph 1-4f, USAIC&FH will—

- a. Act as reviewing agency for Army UAV training, standardization, and technical publications to ensure that they are accurate, are standardized, and do not duplicate each other per AR 34-4 and the Army UAV Standardization Program. This is accomplished through the USAIC&FH, the Futures Integration & Development Center, the Directorate for Combat Developments (DCD), and the TRADOC system manager for Aerial Common Sensor and Airborne ISR Sensors, through continuous review and coordination with UAV system users and proponents, and by developing and reviewing normal and emergency procedures for AVO operator's manuals.

b. In coordination with MACOMs and other services, coordinate active assistance and evaluation programs for UAV training. Frequency for the conduct of these programs is 18 to 24 months. This includes flight evaluations conducted by the USAIC&FH Directorate for Combat Developments to assess standardization and proficiency of AVOs throughout the Army as directed by HQDA and of other service UAV training programs upon request.

c. Advise HQDA, MACOMs, and other services of the status of UAV flight standardization activities. USAIC&FH DCD will also provide information about implementing UAV standardization policies and procedures DOD wide.

d. Develop and recommend changes to general policy guidance for the U.S. Army UAV Standardization Program and provide Army response to requests for recommendations/input from other services.

## **Chapter 5**

### **Flight Procedures and Rules**

#### **5-1. General**

Army personnel engaged in the operation of Army UAVs will comply with applicable—

- a. FARS.
- b. ICAO regulations.
- c. Host country regulations, laws, and rules.
- d. Military regulations.
- e. DOD FLIPs.
- f. Local flight regulations and procedures
- g. UAV operator's manuals, checklists, and SOPs.

#### **5-2. Preflight**

Before beginning a flight, UAV crewmembers will acquaint themselves with the UAV mission, procedures, and rules.

a. *Planning.* AVOs will evaluate UAV performance, mission/sensor equipment capabilities and limitations, departure airfield/airport, en route, lost link route, and approach data and weather conditions, Notices to Airmen, appropriate FLIPs or DOD publications, and requirements for and availability of special use airspace and/or positive control areas approved for UAV use.

b. *Fuel requirements.* At takeoff, UAVs must have enough fuel to execute the UAV mission and reach the destination airfield/airport or alternate, if applicable, and have a planned fuel reserve of—

- (1) For daytime, 30 minutes at cruise.
- (2) For nighttime, 45 minutes at cruise.

c. *Flight weather planning.* AVOs will obtain departure airfield/airport, enroute, destination airfield/airport, and alternate airfield/airport (if required) weather information before takeoff. The following weather requirements apply:

(1) *Flight into icing conditions.* UAVs will not be flown into known or forecast severe or moderate icing conditions. If a flight is to be made into known or forecast light icing conditions, the UAV must be equipped with adequate operational de-icing or anti-icing equipment.

(2) *Flight into turbulence.* UAVs will not be intentionally flown into known or forecast extreme turbulence or into known severe turbulence. UAVs will not be intentionally flown into forecast severe turbulence unless MACOM commanders have established clearance procedures and—

- (a) Weather information is based on area forecasts.
  - (b) Flights will be made in areas where encountering severe turbulence is unlikely.
  - (c) Flights are for essential training or essential missions only.
  - (d) Flight approval authorities are specified.
  - (e) Flights are terminated or depart turbulence if severe turbulence is encountered.
- (3) *Flight into thunderstorms.* UAVs will not be intentionally flown into thunderstorms.

(4) *Destination weather.* Destination airfield/airport weather must be forecast to be equal to or greater than visual flight rules (VFR) minimums at estimated time of arrival (ETA) through 1 hour after ETA. When there are intermittent weather conditions, predominant weather will apply.

(5) *Area forecast.* If there is no weather reporting service, the AVO may use the area forecast.

(6) *Weather briefing.* Local commanders will establish policies specifying when DD Form 175-1 (Flight Weather Briefing) is required to be filed (with DD Form 175 (Military Flight Plan) if and when required for UAVs). Weather information for DD Form 175-1 will be obtained from a military weather facility. If a military weather facility is not available, the MC will obtain a weather forecast in accordance with DOD FLIPs. Automated or computer-based systems may be used to obtain weather information if the system is approved by USAASA and the commander establishes a program to ensure UAV crewmembers are thoroughly familiar with the system in use.

### **5-3. Departure procedures**

- a.* Takeoff minimums are ceilings of 1,000 feet and visibility of 3 statute miles, or as directed in applicable FAA Letters of Agreement.
- b.* Flights within and departures from other than special use airspace are authorized provided the weather requirements of FAR 91 or applicable host country flight or ICAO regulations are met and an appropriate civil aviation authority is obtained.
- c.* UAV flights outside of SUA require prior FAA approval.

### **5-4. Rocket-assisted take-off procedures**

- a.* RATO launches, for those systems incorporating such capabilities, will be conducted in accordance with the appropriate UAV system technical manuals and local SOPs.
- b.* Appropriate firefighting equipment (such as fire extinguishers) will be on hand and in proper operational condition.

### **5-5. En route procedures**

- a. Communications.* UAV crewmembers will establish and maintain two-way communications with appropriate civil/military air traffic control agencies in accordance with FAR 91, host nation, and/or ICAO regulations.
- b. Minimum safe en route altitude.* Outside of SUA, minimum safe en route altitude will be in accordance with FAR 91, host nation, and/or ICAO regulations.

### **5-6. Arrival procedures**

- a. Traffic patterns.* Depending upon the traffic pattern airspeed of the UAVs involved, UAVs will be flown at the published traffic pattern altitude as established by the airfield of intended landing. Exceptions will be as prescribed in FLIPs or as directed by ATC.
- b. Landing.* A UAV will not be flown below the designated minimum safe altitude established for that system by the local SOPs for the airfield of intended landing, or as directed by ATC, unless the UAV is in a position from which a safe approach to the runway or landing area can be made.
- c. Closing flight plans.* If a flight plan is required, the UAV MC will ensure the flight plan is closed when the flight terminates.

### **5-7. Use of airports, heliports, and other landing areas**

- a.* AVOs may operate Army UAVs at airports and heliports classified as military, Federal Government, or public, but only if the facility is suitable for operations and necessary SUA (see para 2-9) provisions have been implemented (AR 95-2, para 9-7).
- b.* Commanders may authorize the use of other temporary landing areas off military reservations and Government leased training areas. They must first obtain approval of the landowner or the approving authority and comply with the landing area requirements of the state or host country. Commanders will consult with the appropriate DARR or host nation aviation agency (AR 95-2, table 6-1).
- c.* The installation or field training exercise commander will set policies on the use of UAVs landing sites on military reservations and field training areas.
- d.* In the event of emergency conditions necessitating landing at other than approved landing facilities, AVOs should be aware that they may be charged for use of private facilities on public airports.

## **Chapter 6**

## **Safety of Flight Messages and Aviation Safety Action Messages**

### **6-1. Overview**

- a.* This chapter prescribes responsibilities and procedures for issuing SOF messages and ASAM and preparing compliance reports. It also provides guidance for grounding and ungrounding of Army aircraft/UAVs due to SOF messages.
- b.* HQDA, Office of the CSA will approve the grounding or ungrounding of an entire MTDS fleet of aircraft, including a series of UAVs.
- c.* HQDA, DCS, G-4 (DALO-AM) will, after coordination with DCS, G-3 (DAPR-FD and DAMO-OD), AMC (AMCLG-ROP), NGB (AVS-A), Assistant Secretary of the Army (Acquisitions, Logistics, and Technology), U.S. Army Aviation Center (ATZQ-S), USASC (CSSC-O), PEO Aviation, and other staff elements as appropriate, approve the release of SOF messages.

## **6-2. Safety of flight responsibilities**

*a.* The Commander, AMCOM will establish procedures applicable to all MTDS aircraft/UAVs (fielded to Army organizations) providing for—

(1) Immediate alert to the Army Safety Action Team (ASAT) principals by telephone when a known or potential emergency SOF condition exists.

(2) Notification of ASAT principals by executive summary upon the initial identification of any high- or medium-risk hazard that may result in the grounding of an entire MTDS or other safety issues having the potential for significant impact upon UAV operations, readiness, or training. Updates to these initial notifications will be provided every 2 weeks until resolved.

(3) Status assessment of ongoing materiel controls to reduce or eliminate significant aviation hazards, in coordination with the CSA quarterly safety in progress report.

(4) Preparation of SOF/ASAM messages.

(5) Prompt coordination of SOF/ASAM messages with ASAT principals, to include the draft message, logistics summary, and a preliminary determination of risks and control options, and prompt transmission of approved messages to MACOMs, activities, and foreign governments (through Army security assistance channels).

(6) After 3 working days, re-transmittal of SOF messages to MACOMs and activity points of contact who failed to verify to AMCOM the receipt and retransmission of SOF messages to subordinate commands.

(7) Preparation of publication changes in accordance with AR 25-30, DA Pam 24-40, and AR 750-10.

(8) Followup SOF messages to MACOMs, activities, and foreign governments as necessary.

(9) Providing information as to where required material and repair parts can be obtained, to include peripheral items. When practicable, assemble kits for issue under a single national stock number.

(10) Coordination of the issue and turn-in of items with appropriate national inventory control points or non-Army agencies. This responsibility will rest with the PEO Aviation for any and all UAV systems still under acquisition/procurement management of PEO Aviation and/or fielded on an other than normal Army fielding basis (for example, RQ-5A Hunter UAV) and not yet fully fielded to Army organizations).

*b.* The Commander, USASC will track the disposition of above hazards in a DA-level hazard communication system in accordance with AR 385-16.

## **Chapter 7 Weight and Balance**

### **7-1. Overview**

UAVs will be within weight and balance limitations (as specified in the appropriate UAV operator's manual) for the entire duration of a flight. This chapter provides a weight and balance control system for operation of Army UAV systems.

*a.* The CG, AMC supervises the direction of overall command activities involving UAV weight and balance.

*b.* The CG, TRADOC will monitor the overall training of UAV weight and balance (para 1-4i) and will—

(1) Train operational unit weight and balance technicians in the following procedures:

(a) Weighing UAVs.

(b) Computing UAV weight and balance.

(c) Maintaining weight and balance records for Army UAVs.

(2) Train Army UAV operators and noncrewmembers in computing weight and balance.

(3) Train personnel to provide UAV weight and balance services at support maintenance facilities.

*c.* The CG, AMCOM is the technical proponent for all U.S. Army UAV weight and balance and will—

(1) Establish UAV weight and balance requirements and procedures in coordination with other Army agencies.

(2) Assist HQDA and AMC in the development of UAV weight and balance policy.

(3) Prepare and make technical data available on UAV weight and balance.

(4) Procure and deliver weight and balance data for Army UAVs.

(5) Make engineering services available to assist service activities in solving UAV weight and balance problems.

*d.* Commanders of installations and units that operate, maintain, repair, or modify Army UAVs will—

(1) Ensure effective application of these policies and procedures.

(2) Develop command directives to implement these policies and procedures.

(3) Appoint, in writing, UAV weight and balance technicians.

### **7-2. Weight and balance technicians**

*a.* To qualify as a weight and balance technician, an individual must satisfactorily complete a weight and balance course approved by TRADOC.

b. If a weight and balance technician trained in accordance with paragraph 7-2a is not available in the unit, commanders may delegate the task.

c. Weight and balance technicians will—

(1) Prepare and maintain up-to-date and accurate individual UAV weight and balance files as described in paragraph 7-4 for all UAVs under their jurisdiction.

(2) Perform required review of individual UAV weight and balance files as described in paragraph 7-6 for all UAVs under their jurisdiction.

(3) Comply with UAV weight and balance provisions of applicable modification work orders or technical manuals pertaining to UAV modifications.

(4) Provide training and assistance in the use of UAV weight and balance data and load adjuster devices, when applicable.

(5) Assure UAVs under their jurisdiction are weighed per paragraph 7-7.

### **7-3. Weight and balance classifications**

UAV weight and balance classifications are stated in the appropriate UAV operator's manual. UAVs are not designed to carry troops and/or cargo other than that mission equipment originally designed to be employed by the particular UAV system. Weight and balance for a UAV system, configured as originally designed and/or intended, have been predetermined by type of mission and sensor configuration. Loading control will be accomplished by adhering to the system configurations designed for the particular UAV system/sensor equipment and documented in the system's operator's manual.

### **7-4. Weight and balance file**

a. This file will contain all the UAV's weight and balance data. The UAV designation and serial number will be noted on the file folder. Each UAV will have its own file that will be maintained in the historical files as well as a copy of the DD Form 365-4 (Weight and Balance Clearance Form F-Transport/Tactical) in the logbook at the LRS during all UAV launch and recovery operations.

b. The file will include the following forms and charts, which will be completed and retained in accordance with instructions of TM 55-1500-342-23:

(1) DD Form 365 (Weight and Balance Personnel, Record of).

(2) DD Form 365-1 (Weight Checklist Record, Chart A-Basic).

(3) DD Form 365-2 (Aircraft Weighing Record, Form B-Aircraft).

(4) DD Form 365-3 (Weight and Balance Record, Chart C-Basic).

(5) DD Form 365-4 (Weight and Balance Clearance Form F-Transport/Tactical). Sufficiently completed DD Forms 365-4 will be in the file, enabling the AVO to determine proper UAV loading for any normal anticipated unit mission and verify that the weight and center of gravity will remain within allowable limits for the entire flight.

c. Electronic computer data sheets may be used in lieu of any of the DD Form 365 series when information is identical to that required on the DD 365 series. Any computer data sheets that meet this requirement may be used. The Army standard automated system (United States Air Force (USAF) Edwards' Automated Weight and Balance System) fulfills these requirements. The system program may be obtained from Commander, AMCOM, ATTN: AM-SAM-I-MDC, Redstone Arsenal, Huntsville, AL 35898.

### **7-5. Removal, addition, or relocation of equipment**

When UAV equipment that is part of a UAV's basic weight is added to, removed from, or relocated within the UAV because of maintenance or specific mission requirements, flight in this changed configuration will not be attempted/ accomplished unless the weight and balance change is documented by one of the following methods:

a. Treating the additions, removals, or relocations as a permanent change by making entries on DD Form 365-3 and establishing a new basic weight and moment. Also, if the change in basic weight or moment is beyond the limits stated in TM 55-1500-342-23, prepare a new DD Form 365-4 that reflects the new basic weight and moment to replace those in the weight and balance files.

b. If the changes are temporary, make entries on DA Form 2408-13 series and DA Form 2408-14 (Uncorrected Fault Record) following the instructions provided in DA Pam 738-750, DA Pam 738-751, and TM 55-1500-342-23. These temporary changes in basic weight may be reflected for a period not to exceed 90 days. If not accomplished sooner, DD Form 365-3 will be updated to reflect the temporary change at the expiration of this 90-day period.

### **7-6. Reviewing weight and balance file**

a. All DD Forms 365-4 in a UAV's weight and balance file will be checked at least every 90 days for accuracy in accordance with the criteria established in TM 55-1500-342-23. New forms must be prepared if changes are required. If no changes are required, the DD Forms 365-4 will be redated and initialed in the date block to certify their currency.

b. In addition, all weight and balance records will, as a minimum, be reviewed every 12 months. The last day of the month is the final day for completing the review. For example, if the previous review was completed on 3 April, the

next review must be completed by 30 April of the following year. This review must include a weight and balance inventory of the UAV and the following statement entered on the DD Form 365-3: "Annual review and inventory completed." The date and adjusted basic weight and moment will accompany this entry.

#### **7-7. Unmanned aerial vehicle weighing**

- a.* Each UAV will be weighed when—
  - (1) Overhaul or major airframe repairs are accomplished.
  - (2) Any modifications or component replacements (including painting) have been made for which the weight and center of gravity cannot be accurately computed.
  - (3) Weight and center-of-gravity data records are suspected to be in error.
  - (4) The period since the previous weighing reaches 36 months for a Class 1 UAV and 24 months for a Class 2 UAV. The last day of the month is the final day for reweighing. For example, if an UAV was last weighed on 3 January 2002, it then must be reweighed by 31 January 2005 if it is a Class 1 UAV and by 31 January 2004 if it is a Class 2 UAV.
- b.* The weight records supplied with a new UAV may be used in lieu of an initial weighing.
- c.* If these weighing requirements are not met, the UAV's status will change to RED "X" until they are met.
- d.* Any maintenance facility providing weighing service will ensure that all UAV weighing equipment under its jurisdiction is tested and certified for accuracy according to specified technical manuals and at the intervals required.

## **Appendix A References**

### **Section I Required Publications**

#### **Aeromedical Policy Letters**

Various numbers. (Cited in 3–8f.) (Available from Aviation Aeromedical Center (ATZD–CD), Ft. Rucker, AL 36362.)

#### **Army Aviation Flight Information Bulletin**

Published by the Air Traffic Control Division, Ft. Rucker, AL. (Cited in para 3–3c.) (Available from Air Traffic Control Division, Ft. Rucker, AL 36362.)

#### **AR 11–2**

Management Control. (Cited in para 1–5.)

#### **AR 15–6**

Procedures for Investigating Officers and Boards of Officers. (Cited in para 2–11.)

#### **AR 25–30**

The Army Publishing Program. (Cited in para 6–2.)

#### **AR 25–55**

The Department of the Army Freedom of Information Act Program. (Cited in para 2–11 and 3–6.)

#### **AR 34–4**

Army Standardization Policy. (Cited in para 4–28.)

#### **AR 40–8**

Temporary Flying Restrictions Due to Exogenous Factors. (Cited in para 3–8.)

#### **AR 40–501**

Standards of Medical Fitness. (Cited in para 1–4, 2–1 and 4–9.)

#### **AR 95–2**

Air Traffic Control, Airspace, Airfields, Flight Activities, and Navigation Aids. (Cited in para 2–8, 2–9, 2–11, 3–3, and 5–7.)

#### **AR 95–20**

Contractor's Flight and Ground Operations. (Cited in para 2–1, 2–2 and 4–24.)

#### **AR 195–2**

Criminal Investigation Activities. (Cited in para 2–11.)

#### **AR 340–21**

The Army Privacy Program. (Cited in para 2–11.)

#### **AR 360–1**

The Army Public Affairs Program. (Cited in para 3–3.)

#### **AR 385–16**

System Safety Engineering and Management

#### **AR 385–40**

Accident Reporting and Records. (Cited in para 3–6.)

#### **AR 385–95**

Army Aviation Accident Prevention. (Cited in para 3–5, 3–10, and 4–4.)

**AR 600–8–1**

Army Casualty Operations/Assistance/Insurance. (Cited in para 3–6.)

**AR 611–1**

Military Occupational Classification Structure Development and Implementation. (Cited in para 4–6.)

**AR 750–10**

Army Modification Program. (Cited in para 6–2.)

**DA Pam 25–40**

Administrative Publishing: Action Officers Guide. (Cited in para 6–2.)

**DA Pam 351–4**

U.S. Army Formal Schools Catalog. (Cited in para 4–6.)

**DA Pam 611–21**

Military Occupation Classification and Structure. (Cited in para 4–26.)

**DA Pam 738–750**

Functional Users Manual for the Army Maintenance Management System (TAMMS). (Cited in para 2–4, 3–12, and 7–5.)

**DA Pam 738–751**

Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS–A). (Cited in para 2–4, 3–12, and 7–5.) )

**DODI 5410.19**

Public Affairs Community Relations Policy Implementation. (Cited in para 3–13.) (Available at <http://www.dtic.mil/whs/directives>.)

**FM 1–120**

Army Air Traffic Services Contingency and Combat Zone Operations. (Cited in para 2–9.) (Available at [www.us.army.mil/portal/portal\\_home.jhtml](http://www.us.army.mil/portal/portal_home.jhtml).)

**FM 1–300**

Flight Operations and Airfield Management. (Cited in para 3–7 and 3–8.) (Available at [www.us.army.mil/portal/portal\\_home.jhtml](http://www.us.army.mil/portal/portal_home.jhtml).)

**FM 3–52**

Army Airspace Command and Control in a Combat Zone. (Cited in para 2–9c.) (Available at [www.adtdl.army.mil/atdls.html](http://www.adtdl.army.mil/atdls.html).)

**FM 21–60**

Visual Signals. (Cited in para 3–8.) (Available at [www.us.army.mil/portal/portal\\_home.jhtml](http://www.us.army.mil/portal/portal_home.jhtml).)

**TC 1–210**

Aircrew Training Program Commander's Guide to Individual and Crew Standardization. (Cited in para 2–9, 3–7, 4–1, 4–4, 4–7, 4–12, and 4–16.) (Available at [www.adtdl.army.mil/atdls.html](http://www.adtdl.army.mil/atdls.html).)

**TM 1–1500–328–23**

Aeronautical Equipment Maintenance Management Policies and Procedures. (Cited in para 3–11 and 3–12.) (Available at [www.logsa.army.mil/etms/show\\_etm.cfm](http://www.logsa.army.mil/etms/show_etm.cfm).)

**TM 55–1500–342–23**

Army Aviation Engineering Weight and Balance. (Cited in para 7–4, 7–5, and 7–6.) (Available at [www.logsa.army.mil/etms/show\\_etm.cfm](http://www.logsa.army.mil/etms/show_etm.cfm).)

**JP 3–52**

Doctrine for Joint Airspace Control in a Combat Zone. (Cited in para 2–9.) (Available from [www.dtic.mil/doctrine/jpoperationsseriespubs.htm](http://www.dtic.mil/doctrine/jpoperationsseriespubs.htm).)

**FAA Order 7610.4**

Special Military Operations. (Cited in para 2–9.) (Available at [www.faa.gov/atpubs](http://www.faa.gov/atpubs).)

**FAR 91 (14 CFR 91)**

General Operating and Flight Rules. (Cited in para 3–3, 5–3, and 5–5.) (Available at <http://www.gpoaccess.gov/ecfr>.)

**10 USC 3062**

Armed Forces: Policy; composition; organized peace establishment. (Cited in para 1–4.) (Available at <http://www.gpoaccess.gov/uscode/index.html>.)

**49 USC 40102 (a)(37)**

Transportation: Definitions. (Cited in para 3–4.) (Available at <http://www.gpoaccess.gov/uscode/index.html>.)

**Section II****Related Publications**

A related publication is a source of additional information. The user does not have to read it to understand this regulation.

**AR 10–25**

United States Army Logistics Integration Agency (USALIA)

**AR 25–11**

Record Communications and the Privacy Communications System

**AR 70–62**

Airworthiness Qualification of U.S. Army Aircraft Systems

**AR 95–1**

Flight Regulations

**AR 95–27**

Operational Procedures for Aircraft Carrying Hazardous Materials

**AR 140–1**

Mission, Organization, and Training

**AR 310–25**

Dictionary of United States Army Terms

**AR 335–15**

Management Information Control System

**AR 570–4**

Manpower Management

**AR 700–138**

Army Logistics Readiness and Sustainability

**AR 750–1**

Army Materiel Maintenance Policy

**AR 750–6**

Ground Safety Notification System

**CTA 50–900**

Clothing and Individual Equipment

**CTA 50–909**

Field and Garrison Furnishings and Equipment

**CTA 50-970**

Expendable/Durable Items

**FM 3-04.301**

Aeromedical Training for Flight Personnel. (Available at [www.us.army.mil/portal/portal\\_home.jhtml](http://www.us.army.mil/portal/portal_home.jhtml).)

**FM 1-508**

Maintaining Aviation Life Support Equipment (ALSE). (Available at [www.us.army.mil/portal/portal\\_home.jhtml](http://www.us.army.mil/portal/portal_home.jhtml).)

**Supply Bulletin (SB) 8-75**

Series Army Medical Department Supply Information. (Available at [www.usamma.army.mil/publish/publications.html](http://www.usamma.army.mil/publish/publications.html).)

**Technical Bulletin (TB) 43-0002-3**

Maintenance Expenditure Limits for Army Aircraft. (Available at [www.logsa.army.mil/etms/find\\_etm.cfm](http://www.logsa.army.mil/etms/find_etm.cfm).)

**TM 1-1500-204-23-1**

Aviation Unit Maintenance (AVUM) And Aviation Intermediate Maintenance (AVIM) Manual For General Aircraft Maintenance (General Maintenance And Practices), Volume 1. (Available at [www.logsa.army.mil/etms/show\\_etm.cfm](http://www.logsa.army.mil/etms/show_etm.cfm).)

**TM 5-4220-202-14**

USAF Flotation Equipment. (Available at [www.logsa.army.mil/etms/show\\_etm.cfm](http://www.logsa.army.mil/etms/show_etm.cfm).)

**TM 10-1670-201-23**

General Maintenance of Parachutes and Other Airdrop Equipment. (Available at [www.logsa.army.mil/etms/show\\_etm.cfm](http://www.logsa.army.mil/etms/show_etm.cfm).)

**TM 38-250**

Preparing Hazardous Materials for Military Air Shipment. (Available at [www.logsa.army.mil/etms/show\\_etm.cfm](http://www.logsa.army.mil/etms/show_etm.cfm).)

**TM 55-1680-317-23&P**

Aviation Unit and Aviation Intermediate Maintenance Manual with Repair Parts and Special Tools List for Army Aircraft Survival. (Available at [www.logsa.army.mil/etms/find\\_etm.cfm](http://www.logsa.army.mil/etms/find_etm.cfm).)

**FAA Air Traffic Publications**

Aeronautical Information Manual. (Available at [www.faa.gov/atpubs](http://www.faa.gov/atpubs).)

**FAR 1 (14 CFR 1)**

Terms. (Available from [www.gpoaccess.gov/ecfr](http://www.gpoaccess.gov/ecfr).)

**FAR 105 (14 CFR 105)**

Parachute Operations. (Available from [www.gpoaccess.gov/ecfr](http://www.gpoaccess.gov/ecfr).)

**Section III****Prescribed Forms**

The following forms are available on the Army Electronic Library CD-Rom and the APD Web site ([www.apd.army.mil](http://www.apd.army.mil)) unless otherwise stated. DD forms are available from the Office of the Secretary of Defense Web site ([www.dior.whs.mil](http://www.dior.whs.mil)).

**DA Form 7525**

UAV Mission Schedule/Brief. (Prescribed in para 2-12 and app B.)

**Section IV****Referenced Forms****DA Form 11-2-R**

Management Control Evaluation Certification Statement

**DA Form 285**

U.S. Army Accident Report

**DA Form 2028**

Recommended Changes to Publications and Blank Forms

**DA Form 2408-12**

Army Aviator's Flight Record

**DA Form 2408-13**

Aircraft Status Information Record

**DA Form 2408-14**

Uncorrected Fault Record

**DA Form 2696**

Operational Hazard Report

**DA Form 4755**

Employee Report of Alleged Unsafe or Unhealthful Working Conditions

**DD Form 175**

Flight Plan, Military

**DD Form 175-1**

Flight Weather Briefing

**DD Form 365**

Record of Weight and Balance Personnel

**DD Form 365-1**

Weight Checklist Record, Chart A—Basic

**DD Form 365-2**

Weighing Record, Form B—Aircraft

**DD Form 365-3**

Weight and Balance Record, Chart C—Basic

**DD Form 365-4**

Weight and Balance Clearance Form F—Transport/Tactical

## Appendix B

### Instructions for completing DA Form 7525 (UAV Mission Schedule/Brief)

The briefer is responsible for ensuring that all key mission elements noted on DA Form 7525 have been briefed per paragraph 2–12b and documenting completion of the briefing on DA Form 7525. Mission briefings may be in the form of a mission commander's brief, a detailed operations order, or locally developed briefing formats as long as all the minimum mandatory items are covered. The mission brief may be accomplished by telephonic or other means provided all key elements are addressed and recorded by both parties to the brief (see fig B–1, DA Form 7525 completed by the LRS MC, and fig B–2, DA Form 7525 completed by the tactical operations center MC).

*Note.* Mandatory items for all flights are marked with an \*.

#### B–1. Page 1

- a. *\*Item 1, DATE.* Enter the mission date in YYYYMMDD format.
- b. *\*Item 2, SORTIE NUMBER.* Enter mission sortie number.
- c. *\*Item 3, UAV TAIL# PRIMARY/BACKUP.* Enter UAV tail numbers for the primary and backup UAVs.
- d. *\*Item 4, LRS SHELTER NUMBER.* Enter the GCS number located at the LRS location.
- e. *\*Item 5, LRS MC NAME.* Enter the name of the MC for the launch and recovery site GCS.
- f. *\*Item 6, LRS AVO NAME.* Enter the name of the AVO at the launch and recovery site GCS.
- g. *\*Item 7, TOC SHELTER NUMBER.* Enter the GCS number located at the TOC site/location.
- h. *\*Item 8, TOC MC NAME.* Enter the name of the MC for the TOC site GCS.
- i. *\*Item 9, TOC AVO#1 NAME.* Enter the name of the first AVO at the TOC site GCS.
- j. *\*Item 10, TOC MPO#1 NAME.* Enter the name of the first MPO at the TOC site GCS.
- k. *\*Item 11, ETD/ETA.* Enter estimated time of departure and estimated time of arrival/return.
- l. *\*Item 12, ADDRESS/CHANNEL/FREQUENCY.* Enter the address, channel, and frequency information for the primary and backup air vehicles for the mission air vehicle and relay air vehicle, if applicable.
- m. *\*Item 13, NET ID/HOP/FREQUENCY.* Enter the net identification, hop key, and frequency information for the primary and backup air vehicles for the mission air vehicle and relay air vehicle, if applicable.
- n. *\*Item 14, IFF CODE.* The mission commander will initial receipt and understanding of the mission schedule/brief information.
- o. *\*Item 15, MC INITIALS (LRS or TOC MC).* The mission commanders at both the LRS and/or TOC locations will each complete and initial receipt and understanding of the mission schedule/brief information.
- p. *Item 16, LEGEND.*
  - (1) *\*Item 16a, MISSION TYPE.* Indicate the appropriate mission type for the UAV mission to be conducted.
  - (2) *\*Item 16b, FLIGHT CONDITIONS.* Indicate the flight conditions expected for the mission to be conducted.
  - (3) *\*Item 16, MISSION CONFIGURATION.* Indicate the UAV mission/sensor equipment configuration designated for the mission to be conducted.

#### B–2. Page 2

- a. *Item 17, POSTMISSION DEBRIEF.*
- b. *\*Item 17a, MISSION STATUS.* Indicate whether the mission was completed as briefed, not completed as briefed, changed, or canceled by checking the appropriate status.
- c. *Item 17b, AVO REPORT.* Space is provided for AVO to comment on significant/unique meteorological events encountered during the mission.
- d. *\*Item 17c, CREW ENDURANCE STATUS.* Enter comments on the crew endurance status, time executed to date, and time, if any, remaining for additional mission requirements.
- e. *Item 17d, REMARKS.* Enter additional remarks as appropriate or if the mission was not completed as pre-briefed or is canceled.
- f. *\*Item 18a, MISSION COMMANDER'S SIGNATURE.* Mission commander signs completed postmission report here.
- g. *\*Item 18b, DATE.* Enter the date MC completes DA Form 7525 in YYYYMMDD format.

#### B–3. Notes

- a. DA Form 7525 will be used to document the completion of required briefings. As a minimum it will be maintained on file for the time period specified in this regulation.
- b. DA Form 7525 is provided for the commander's use. Unit developed forms may be used as long as all mandatory items are covered.
- c. Information contained on DA Form 7525 does not relieve UAV crewmembers from the requirement to know and adhere to applicable regulations, SOPs, and policies.

*d.* Supporting and supported unit commanders will coordinate and designate command relationships to execute mission briefings when aircrews are separated from their parent unit.

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17. POST MISSION DEBRIEF	
<p>a. MISSION STATUS <i>(Check one - Indicate whether the mission was completed as briefed, not completed as briefed, changed, or canceled by checking the appropriate status)</i></p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <input checked="checked" type="checkbox"/> COMPLETED AS BRIEFED         </div> <div style="text-align: center;"> <input type="checkbox"/> NOT COMPLETED AS BRIEFED         </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <input type="checkbox"/> CHANGED         </div> <div style="text-align: center;"> <input type="checkbox"/> CANCELLED         </div> </div>	
<p>b. AVO REPORT <i>(Space is provided for AVO to comment on significant/unique meteorological events encountered during the mission.)</i></p> <p>During initial in-country RL progression training flights for AVOs Harney and Rodriguez, encountered icing conditions at original training mission altitude (10,000' MSL) and descended to 8,000' MSL to maintain flight training profile; MPO (Gorff) subsequently discovered mobile SCUD system transloading site 10kms NNW of IID MSR "Red-43" near town of Al Jawhira. SALUTE report submitted to Bde ACT personnel.</p>	
<p>c. CREW ENDURANCE STATUS <i>(Enter comments on the crew endurance status, time executed to date, and time, if any remaining for additional mission requirements.)</i></p> <p>LRS Team #2 - Flight times completed, by position, are:          Bables - AVO = 0.0; MPO = 1.0          Snow - AVO = 1.0; MPO = 0.0</p> <p>TOC Team #2 - Flight times completed, by position, are:          Gorff - AVO = 1.5; MPO = 1.0          Harney - AVO = 1.5; MPO = 1.5          Rodriguez - AVO = 1.0; MPO = 1.5</p>	
<p>d. REMARKS <i>(Enter additional remarks as appropriate or if the mission was not completed as pre-briefed or is canceled.)</i></p>	
<p>17a. MISSION COMMANDER's SIGNATURE</p> <p style="margin-top: 20px;">K. L. BABLES</p>	<p>17b. DATE (YYYYMMDD)</p> <p style="margin-top: 20px;">20040403</p>

DA FORM 7525, MAR 2004

Page 2 of 2

Figure B-1. Example of DA Form 7525 completed by the LRS MC—Continued



17. POST MISSION DEBRIEF	
<p>a. MISSION STATUS <i>(Check one - Indicate whether the mission was completed as briefed, not completed as briefed, changed, or canceled by checking the appropriate status)</i></p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"><input type="checkbox"/> COMPLETED AS BRIEFED</div> <div style="text-align: center;"><input type="checkbox"/> NOT COMPLETED AS BRIEFED</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"><input checked="" type="checkbox"/> CHANGED</div> <div style="text-align: center;"><input type="checkbox"/> CANCELLED</div> </div>	
<p>b. AVO REPORT <i>(Space is provided for AVO to comment on significant/unique meteorological events encountered during the mission.)</i></p> <p>Mission plan changed/re-tasked one hour into relief-on-station mission [AV#1980] from route reconnaissance to force protection and diverted air vehicle to Target #03-28a to search for possible IED along 11D MSR "Blue-32" IAW Bde S2 guidance.</p>          	
<p>c. CREW ENDURANCE STATUS <i>(Enter comments on the crew endurance status, time executed to date, and time, if any remaining for additional mission requirements.)</i></p> <p>TOC Team #1 - Total flight times completed for relief-on-station missions, by position, are:</p> <p>Bables - AVO = 4.0; MPO = 2.0  Haskins - AVO = 4.0; MPO = 4.0  Wilson, J - AVO = 2.0; MPO = 2.0</p>          	
<p>d. REMARKS <i>(Enter additional remarks as appropriate or if the mission was not completed as pre-briefed or is canceled.)</i></p>                      	
<p>17a. MISSION COMMANDER's SIGNATURE</p>  <p>T.J. GIROUARD III</p>	<p>17b. DATE (YYYYMMDD)</p>  <p>20040403</p>

DA FORM 7525, MAR 2004

Page 2 of 2

Figure B-2. Example of DA Form 7525 completed by the tactical operations center MC—Continued

## Appendix C

### Management Control Evaluation Checklist

#### C-1. Function.

The function covered by this checklist is the administration of the management control process.

#### C-2. Purpose.

The purpose of this checklist is to assist assessable unit managers and Management Control Administrators (MCAs) in evaluating the key management controls outlined below. It is not intended to cover all controls.

#### C-3. Instructions.

Answers must be based on the actual testing of key management controls (document analysis, direct observation, sampling, simulation, and so on). Answers that indicate deficiencies must be explained and corrective action indicated in supporting documentation. These key management controls must be evaluated at least once every 5 years. Certification that this evaluation has been conducted must be accomplished on DA Form 11-2-R (Management Control Evaluation Certification Statement).

#### C-4. Test Questions.

*a. HQDA only.*

(1) Are standardized aviation safety, standardization, and utilization regulations and procedures published by a DA proponent?

(2) Is safety-of-flight information prepared and sent to the field in a timely manner?

*b. User.*

(1) Are airports, heliports, and landing areas approved for flight operations?

(2) Are local flying rules in agreement with Federal, DOD, and DA policies?

(3) Are applicable safety regulations and special-use airspace operation guidance followed?

(4) Are violations of safety and special-use airspace guidance reported and investigated by appropriate personnel per Federal, DOD, and DA guidance?

(5) Are Army UAV aircraft used for official purposes prescribed in AR 95-23 and DOD Directive 6055?

(6) Are aircrew training programs carried out per applicable Army guidance to include flying hours and synthetic flight training?

(7) Are personnel who do not meet proficiency requirements restricted from flight duty?

(8) Is UAV life support equipment available and maintained in accordance with applicable guidance?

(9) Has the airspace been approved for UAV operations?

*c. Reserve component.* Are additional flight training periods managed in accordance with applicable policies and regulations?

#### C-5. Comments.

Help to make this a better tool for evaluation management controls. Submit comments to HQDA, ATTN: DAMO-RQ, 400 Army Pentagon, Washington DC 20310-0400.

## **Glossary**

### **Section I Abbreviations**

**AMC**

Army Materiel Command

**AMCOM**

Aviation and Missile Command

**APART**

annual proficiency and readiness test

**AR**

Army Regulation

**ARNG**

Army National Guard

**ASAM**

aviation safety action message

**ASAT**

Army Safety Action Team

**ASTAMIDS**

airborne standoff minefield detection system

**ATC**

air traffic control

**ATM**

aircrew training manual

**ATP**

aircrew training program

**AVO**

air vehicle operator/crewmember

**CFR**

Code of Federal Regulations

**CG**

commanding general

**CSA**

Chief of Staff, Army

**CTA**

common tables of allowances

**DA**

Department of the Army

**DAC**

Department of the Army Civilian

**DA Pam**

Department of the Army Pamphlet

**DARR**

Department of the Army Regional Representative

**DCD**

Directorate for Combat Development

**DCS, G-3**

Deputy Chief of Staff, G-3

**DCS, G-4**

Deputy Chief of Staff, G-4

**DOD**

Department of Defense

**EP**

external pilot

**ETA**

estimated time of arrival

**ETD**

estimated time of departure

**FAA**

Federal Aviation Administration

**FAR**

Federal Aviation Regulation

**FLIP**

flight information publication

**FM**

field manual

**FOIA**

Freedom of Information Act

**GCS**

ground control station

**HQDA**

Headquarters, Department of the Army

**IATF**

individual aircrew training folder

**ICAO**

International Civil Aviation Organization

**IP**

instructor pilot

**IRR**

individual ready reserve

**ISR**

intelligence, surveillance, and reconnaissance

**LRS**

launch and recovery site

**MACOM**

major Army command

**MC**

mission commander

**ME**

maintenance test flight evaluator

**MOC**

maintenance and operations check

**MOS**

military occupational specialty

**MOU**

memorandum of understanding

**MP**

maintenance test pilot

**MPA**

military pay and allowance

**MPO**

mission payload operator

**MPU**

mobile power unit

**MTDS**

mission, type, design, and series

**MTF**

maintenance test flight

**MTOE**

modified table of organization and equipment

**NGB**

National Guard Bureau

**OASD(PA)**

Office of the Assistant Secretary of Defense (Public Affairs)

**PEO**

program executive office(r)

**PM**

program/project manager

**RATO**

rocket assisted take off

**RL**

readiness level

**SOF**

safety of flight

**SOP**

standing operating procedure

**SP**

standardization instructor pilot

**SUA**

special use airspace

**TDA**

table of distribution and allowances

**TM**

technical manual

**TOC**

tactical operations center

**TRADOC**

U.S. Army Training and Doctrine Command

**TUAV**

tactical unmanned aerial vehicle

**UAV**

unmanned aerial vehicle

**UAVS**

unmanned aerial vehicle systems

**USAASA**

U.S. Army Aeronautical Services Agency

**USAIC&FH**

U.S. Army Intelligence Center and Fort Huachuca

**USAF**

United States Air Force

**USASC**

U.S. Army Safety Center

**UT**

unit trainer

**VFR**

visual flight rules

**Section II****Terms****Aeronautical information manual**

A manual that provides the aviation community with basic flight information and ATC procedures for use in the National Airspace System of the United States. It also contains items of interest to pilots and aircrewmembers concerning health and medical facts, factors affecting flight safety, a pilot/controller glossary of terms used in the Air Traffic Control System, and information on safety, accident, and hazard reporting.

**Air traffic**

Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

**Aircrew training manual (ATM)**

A publication that contains Army training requirements for Army flight crewmembers and programs for qualification, refresher, mission, and continuation training in support of the aircrew training program (ATP), including unmanned aerial vehicle crewmembers training programs.

**Aircrew training program (ATP)**

Army aviation aircrew standardized training and evaluation program.

**Air vehicle operator**

An individual who performs duties controlling the flight of an unmanned aerial vehicle or the operation of its mission equipment that is essential to the operation of the UAV (that is, an AVO, EP, IP, MC, MPO, and/or SP). Also refers to UAV personnel manning any of the “crewmember” positions: the AVO position, the MPO position, the MC position, and, if applicable, and the EP position, in accordance with the appropriate systems ATM.

**Army aircraft**

Aircraft (including manned and unmanned) under the jurisdiction of the Department of the Army.

**Army aviation standardization**

The use of uniform tested procedures and techniques to attain a high level of readiness and professionalism in the operation and employment of Army aircraft, including unmanned aerial vehicles. This is achieved through standardized publications and training literature, a disciplined instructor pilot force, tests, flight checks, and command supervision. Standardization includes aviator cockpit, performance, aircrew teamwork, tactics, maintenance, and safety. For UAVs, standardization includes external pilot/external air vehicle crewmember performance, air vehicle crewmember/air vehicle operator, and mission payload operator performance, aircrew teamwork, tactics, maintenance, and safety.

**Army safety action team (ASAT)**

Standing committee that meets on call to address HQDA-level Safety of Flight and Safety of Use issues, provide coordinated recommendations to the Office of the Chief of Staff, Army, and expedite corrective actions to maximize readiness, safety and training. See AR 385–16 for specific objectives, membership and procedures.

**Aviation safety action messages**

Electrically transmitted messages that convey maintenance, technical or general interest information where a low to medium risk safety condition has been determined per AR 385–16. ASAMs are of a lower priority than SOF messages.

**Catastrophic failure**

Any failure that leads to the loss of the UAV(s).

**Command/staff aviation officer**

A special staff aviator designated by the commander to provide advice or manage aviation assets, aviation standardization, and aviation safety.

**Controlled airspace**

A generic term that covers the different classification of airspace (Class A, Class B, Class C, Class D, and Class E airspace) and defined dimensions within which air traffic control service is provided to instrumented flight rules flights and to VFR flights in accordance with the airspace classification (see the Aeronautical Information Manual).

**Crewmember**

Includes all aviators (rated crewmembers), nonrated crewmembers, and others who perform aircrew duties as listed in AR 95–1, para 2–6, and this regulation, para 2–5. For UAVs only, a person assigned to perform duties during the operation of an air vehicle during flight time.

**Cross-country flight**

A flight extending beyond the local flying area or within the local flying area which is planned to terminate at a place other than the place of origin.

**External pilot (EP)**

The UAV crewmember who, in the absence of full automatic takeoff and landing systems, visually controls the UAV flight path, generally during takeoff and/or landing.

**Flight crew station**

A station in an aircraft that a flight crewmember occupies to perform his/her flight duty, for example, pilot stations specified in operator's manuals. For UAVs, a station associated with the in-flight operation of a UAV at which flight controls may be used to control air vehicle flight; for example, air vehicle operator, external pilot, or mission payload operator stations specified in the operator's manual.

**Flight crewmember**

Any instructor pilot, flight examiner, pilot, copilot, flight engineer/mechanic, flight navigator, weapon systems operator, bombardier navigator, radar intercept operator, sensory system operator, boom operator, crew chief, loadmaster, remotely operated/piloted aircraft operator, unmanned aerial vehicle operator, defensive/offensive system operator, and other flight manual handbook identified crewmember when assigned to their respective crew positions to conduct a military flight or any flight under the contract. For UAVs, an AVO, EP, IP, MC, MPO or SP assigned to duty during the inflight operation of an air vehicle.

**Flight surgeon**

Medical officer who has graduated from an approved military course in aviation medicine. References to flight surgeons include aeromedical physician's assistant.

**Installation**

For Army Aviation Standardization Program purposes, continental United States active component posts, camps, or stations; ARNG States; Army Reserve Commands; overseas corps, divisions, independent regiments, groups, and brigades. For other than standardization purposes includes Reserve Component facilities.

**Instructor pilot (IP)**

A UAV crewmember who conducts training and evaluation of AVOs and UAV unit trainers in designated UAVs and promotes safety among aircrewmembers. Training and evaluation include air vehicle operation, qualification, unit employment, visual flight, and crew performance.

**Internal pilot**

An UAV crewmember who operates the AV from within a control station that exercises complete control over the air vehicle.

**Maintenance**

The inspection, overhaul, repair, preservation, and/or the replacement of parts, but excludes preventive maintenance.

**Maintenance and operations check (MOC)**

Systems check made on the ground through engine runup and taxiing. Checks made using auxiliary power or testing equipment to simulate, insofar as possible, actual conditions under which the system is to operate. These checks are made to ensure that aircraft systems or components disturbed during an inspection or maintenance have been repaired or adjusted satisfactorily.

**Mission commander (MC)**

The designated individual tasked with the overall responsibility for the operation and safety of the UAV mission.

**National Airspace System (NAS)**

All of the airspace above the surface of the earth over the United States and its possessions.

**Night**

The time between the end of evening nautical twilight and the beginning of morning nautical twilight converted to local time.

**Nonrated crewmember**

The status assigned to soldiers who have duties directly related to the preparation and maintenance of UAVs and/or their mission payload systems, but not the in-flight mission; duties that either supplement or are not/cannot be performed by the UAV system's assigned rated crewmembers.

**Operational flying**

Flying performed by qualified personnel primarily for mission support or training, while serving in assignments in which basic flying skills normally are kept current while performing assigned duties. All flying by qualified members of the RC not on extended active duty is operational flying.

**Rated crewmember**

UAV crewmembers described in this regulation and in AR 611–1 who have completed a TRADOC-approved UAV qualification training program, and whose assigned duties directly influence the inflight mission of the UAV and/or its mission payload equipment.

**Remotely operated aircraft**

FAA terminology for unmanned aerial vehicles

**Restricted area**

Airspace designated in FAR 1 within which the flight of aircraft, while not prohibited, is subject to restriction(s).

**Safety of flight (SOF) messages**

Electrically transmitted messages pertaining to any defect or hazardous condition, actual or potential, that can cause personal injury, death, or damage to aircraft, components or repair parts where a medium to high risk safety condition has been determined per AR 385–16.

**Special use airspace (SUA)**

Airspace designated by the FAA with specific vertical and lateral limits, established for the purpose of containing hazardous activities or activity that could be hazardous to nonparticipating aircraft. Limitation on nonparticipating aircraft may range from absolute exclusion to complete freedom of use within certain areas, depending upon activity being conducted.

**Standardization instructor pilot (SP)**

A qualified instructor pilot designated by the commander, in writing, to supervise unit standardization programs. Primarily trains and evaluates other SPs and IPs.

**Traffic pattern**

The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport or airfield.

**Training mission**

Missions flown for flight qualification, refresher, or proficiency/currency training; ATP requirements, and authorized training exercises.

**Unit trainer (UT)**

A UAV crewmember designated to instruct in areas of special training to assist in unit training programs and achieve established training standards.

**Unmanned aerial vehicle (UAV)**

An aircraft capable of flight beyond visual line of sight under remote or autonomous control for military purposes, primarily for reconnaissance, surveillance, and other intelligence gathering missions, as well as for the adjustment of artillery and mortar fire, and may be used in an aerial target spotting/identification role. A UAV can be expendable or recoverable, can carry a payload, is not operated for sport or hobby, and does not transport passengers or crew. For purposes of compliance with 14 CFR 1, subchapter A, part 1.1, UAVs are to be considered “aircraft,” typically either an “airplane” or “rotorcraft,” as defined in 14 CFR 1, subchapter A, part 1.1 (FAA refers to these aircraft as remotely operated aircraft).

**UAV operators**

Any personnel positions—AVO, EP, MC, MPO, and so on. In daily operational reference to one of more the UAV air vehicle crewmember positions, the generic term AVO is used routinely and in the regulation.

**UAV control station**

A flight deck on the ground without external flight environment clues (no direct visual contact with the UAV) used for control of UAVs.

### **Section III**

#### **Special Abbreviations and Terms**

This section contains no entries.

## **Index**

This index is organized alphabetically by topic and by subtopic within topic. Topics and subtopics are identified by paragraph number.

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